DOCUMENT RESUME

ED 131 569 EA 008 891

AUTHOR	Rodhe, Birgit
TITLE	Teachers and School Building. Programme on Educational Building 7.
INSTITUTION	Organisation for Economic Cooperation and Development, Paris (France).
PUB DATE	Sep 76
NOTE	59p.
AVAILABLE FROM	Organisation for Economic Cooperation and Development, 2 rue Andre Pascal, 75775 Paris CEDEX 16, France (free)
EDRS PRICE	MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	*Building Innovation; Educational Innovation; Educational Objectives; Educational Specifications; Elementary Secondary Education; International Organizations; International Programs; *School Buildings; School Improvement; *Space Utilization; *Teacher Attitudes; *Teacher Participation

ABSTRACT

This paper describes the contribution of educators in planning new school buildings and adapting existing facilities. It also looks at the measures needed to help teachers make full use of the educational tool represented by the school building, its furniture, and its equipment. Some illustrations from different countries and at different school levels are given to show how teachers have found constructive and imaginative solutions to the problems of adapting existing buildings in order to realize new objectives. Examples are also given of teacher involvement in planning new buildings, and furnishing and equipping new or remodelled school buildings. Methods suggested for increasing teacher participation in the planning and effective utilization of facilities are (1) including the relation to physical facilities in initial teacher training as well as inservice training, (2) involving teachers in research and development work on school buildings, and (3) having an initiation phase for teachers and other personnel occupying new buildings. (Author/MLF)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

FD131569

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL BY MICROFICHE ONLY HAS BEEN GRANTED BY

OECD

TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER.

ED 068 891

peb 7

PROGRAMME ON EDUCATIONAL BUILDING

TEACHERS AND SCHOOL BUILDING

BY BIRGIT RODHE

2

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
PARIS SEPTEMBER 1976

The Organisation for Economic Co-operation and Development (OECD) was set up under a Convention signed in Paris on 14th December, 1960, which provides that the OECD shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;

- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development;

- to contribute to the expansion of world trade on a multi-lateral non-discriminatory basis in accordance with international obligations.

The Members of OECD are Australia, Austria, Belgium, Canada, Denmark, Finland, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxemburg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

The Programme on Educational Building (PEB) was established by the Council of the Organisation for Economic Co-operation and Development as from January 1972. Its present mandate expires at the end of 1976.

The main objectives of the Programme are:

- to facilitate the exchange of information and experience on aspects of educational building judged to be important by participating Member countries;

- to promote co-operation between such Member countries regarding the technical bases for improving the quality, speed and cost effectiveness of school construction.

The Programme functions within the Directorate for Social Affairs, Manpower and Education of the Organisation in accordance with the decisions of the Council of the Organisation, under the authority of the Secretary-General. It is directed by a Steering Committee of senior government officials, and financed by participating governments.

* * *

© OECD, 1976.
Queries concerning permissions or translation rights should be addressed to:
Director of Information, OECD
2, rue André-Pascal, 75775 PARIS CEDEX 16, France.

TEACHERS AND SCHOOL BUILDING

Leaflet

by

BIRGIT RODHE

CONTENTS

PREFACE 4

AUTHOR'S NOTE 5

INTRODUCTION 6

A. USE AND ADAPTATION OF EXISTING BUILDINGS 8

B. NEW BUILDING - BRIEFING AND DESIGN STAGES 20

C. NEW BUILDING - FURNITURE AND EQUIPMENT 33

D. NEW BUILDING - INITIATION IN USE AND CONTINUOUS PLANNING 36

E. TEACHER PARTICIPATION IN RESEARCH AND DEVELOPMENT WORK 46

F. TRAINING OF THE USERS 47

G. SUMMARY OF CONCLUSIONS 52

PREFACE

Two current programmes within OECD deal respectively with Educational Building and Teacher Policies. Within each the relationship to the problems dealt with in the other has become apparent. In the work under the Programme on Educational Building (PEB) it is pointed out that if educational policy is to respond successfully to change, building needs to be an integral part of that policy and forms, like teacher supply, a prime indicator of how any policy is feasible. Similarly, the work of the Organisation on Teacher Policies has led to detailed analyses of the changing role of teachers as a result of new educational policies; given a suitable working environment, administrative structure and professional support they are increasingly expected to pass from teaching conceived as the transmission of knowledge to teaching conceived as the organisation and management of the learning process.

Teachers often regard the present state of educational building as a major hindrance to realising new patterns in their tasks. Those responsible for educational building ask for constructive co-operation from teachers in the development of new patterns for building, sometimes complaining that teachers do not always use buildings as they were intended to be used.

It is against this background that the present paper was written. It represents PEB's contribution to the Conference on Teacher Policies, organised in November 1974 in Paris under the Education Committee's programme. It aims at combining some of the concerns of the two programmes, mainly at a practical level. It attempts to describe the contribution of educationists in the provision of new school buildings and in the adaptation of existing stock, and also looks at the measures needed to help teachers make full use of the school building, its furniture and equipment.

The author is Mrs. Birgit Rodhe, whose wealth of experience first as a teacher, subsequently as Deputy Director for Education with particular responsibility for school building, and later as Councillor for Education of the City of Malmö, Sweden, and currently as a headmistress, makes her exceptionally well qualified to write on the subject of teachers and school building.

It is hoped that the ideas and observations put forward by Mrs. Rodhe will stimulate discussion and further thinking on how teachers can contribute to and participate in all aspects of school building as a major factor in improving educational effectiveness.

AUTHOR'S NOTE

Keeping within the mandate given me for this paper, I have made no attempt to deal with the broad issues of Educational Change in our time and the ways in which school building can be made to relate to it; this is done under various PEB activities. Neither have I tried to define the role of teachers in educational change; this is done under the Teacher Policies activity as part of the Education Committee Programme. Nor have I discussed the implications for school building of new patterns of teacher tasks.

The broad title of this paper - Teachers and School Building - has been used merely for the sake of convenience and is interpreted chiefly as referring to teacher use of and teacher participation in school building. Though an attempt has been made to consider teacher participation in relation to that of other interested parties, the emphasis has necessarily been on the teachers.

A great deal of literature exists on the subject of teacher tasks and on that of school building, of which, understandably, I am familiar with only a small part. On the theme of this paper, in contrast, comparatively little appears to have been written which may help to explain the paper's preliminary and tentative nature. If, nevertheless, it has some measure of success in treating the point at issue, this is due to the generous contributions made by many people with wide experience in the field.

During this past decade I have had the privilege of meeting these people, visiting schools and discussing the related problems in many countries. Some of those who have contributed most to my understanding of the problems on hand, were kind enough to read and comment on a first version of the paper, which as a result of their comments has changed substantially. I should like to express my gratitude to them, collectively, for their help and hope that this final version does some justice to their efforts.

INTRODUCTION

1. In recent years the school building has taken on greater educational importance. From having been "an envelope, the passive setting for education, now the school-house is becoming a tool, a series of environmental and communication services which are actively involved in instruction".* It has been realised that school buildings which used to be hard shells around activities of a fixed and stable character can become instruments with which to change this character and even to keep it changing and flexible. This may be true not only of new, more or less custom-made buildings but also of the existing stock, which may prove more flexible than was thought possible.

2. At the same time, however, and paradoxically, school buildings seem to be losing importance to the point of losing their distinctive character, or even of becoming obsolete. Today, much of education takes place outside schools. Advocates of 'deschooling' want to do away with school buildings, and proponents of new and advanced communication media argue that the transmission of knowledge is independent of a specific building. This might eventually lead to dealing with a physical environment for learning regardless of context - the home (with the help of media), a library, buildings of varying kinds (warehouses, factories, office buildings, etc.) sometimes referred to as 'found space', 'schools without walls', 'non-school schools', as well as traditional school buildings. Understandably, this very wide concept is too new and too complicated to be dealt with throughout the present leaflet which focuses essentially on conventional types of building. It is hoped nevertheless that some of the arguments put forward can also be applied to the design and use of learning environments of a less conventional character.

3. Teacher roles and tasks are changing in somewhat parallel ways, and they are also contradictory. Teachers are no longer expected just to follow traditional patterns but to subject their own teaching patterns to criticism in relation to new objectives for the school and participate in creating new patterns in order to come closer to the achievement of these objectives. In doing so, they will probably have to plan, even perform, their teacher tasks as members of teams, where they will exercise their professional skills as teachers together with colleagues and people with other professional skills. Thus their work seems to grow in importance. At the same time, however, they may feel that it is losing importance, since they are no longer autonomous as they were in their self-contained classrooms, and that as team members they have lost independence. Also, in the school of today the staff will comprise specialists other than teachers and the pupils will learn lessons outside school which can only be learned in society at large; one talks increasingly about the parallel school. In addition, teachers do not alone decide about education; national and local politics play an important role and both parents and pupils also want their say. Even in their teaching individual teachers may feel that they are robbed of their distinctive professional task, as more and more media are employed and supply the information which, earlier, the teacher alone provided.

---

* Jonathan King, quoted in B. Rodhe, "A Two-Way Open School", Prospects, UNESCO, Vol. II, N° 1, Spring 1972.

4. Several of the trends outlined above may sometimes appear as and be treated as ends in themselves: educational media, open plan schools, team teaching, community schools etc. They arouse a good deal of immediate interest but may be passing fads, to be succeeded by others. Yet they intend to be and should be instruments for achievin, the overriding objectives of a new education, provided they are planned as part of a global strategy.

5. The term 'new educational objectives' is here used in its widest sense. Education is increasingly becoming a very comprehensive concept. The use of the school building as an educational tool, therefore, could and should concern such aspects as:

- adaptation of the physical facilities in order to create new teaching and learning situations in relation to new objectives (individualisation, social education, etc.), including the use of new media;

- transformation of the general atmosphere of the school building with a view to attaining better and more friendly working and living conditions, including a change in furnishing and equipment;

- use of the school building for general community needs; the integration of the school building in community building for general cultural and/or leisure purposes (regard for the needs of adult learners should be an important and specific part of this aspect);

- readiness to use physical facilities other than the school building for teaching and learning purposes, as a substitute ('found space') or as major supplements ('schools without walls').

6. The definition of overriding educational objectives is the outcome of broad political and social opinion, and lies within the sphere of policy-makers rather than of teachers. Increasingly, educational change is seen as both the product and creator of social change. This must be kept in mind as the opportunities for the teachers to influence school buildings and use them for achieving educational objectives are dealt with in more detail. Yet the widening of the concept of school building as described above fits well into the general change in the pattern of teacher tasks, characterised as "... the passage from a certain level of craftsmanship to that of a more rational organisation of the educational environment, based on the mobilisation of a variety of human and material resources".*

7. Enlarging upon these general concepts the following topics are dealt with in this leaflet:

(i) teacher participation in the adaptation of existing buildings for the realisation of new educational objectives (Section A);

(ii) teachers as active members of teams for the planning and use of new building:

(a) the briefing and design stages (Section B);

---

* Teacher Policies - General Report of the Conference, OECD, Paris, 1976.

(b) furniture and equipment (Section C);
(c) initiation in use and continuous planning (Section D).

(iii) teacher participation in school building research and development work (Section E);

(iv) training the users of school buildings, initial and further training of teachers (Section F).

Finally, a summary of conclusions is given in Section G.

A. USE AND ADAPTATION OF EXISTING BUILDINGS

8. At the beginning of the school year 1974-75 a Director of Education wrote a circular letter to the teachers in his county, on the subject of whether enough resources were available for their work. This is what he wrote about school buildings: "The school building represents a potential, but also a constraint to the fulfilment of today's educational tasks. Staff in many schools have experienced during these last years, however, that their own school facilities could be used in ways which they themselves had not realised before. The adoption of a less traditional view of the size of groups for learning and activities increases the need for rooms smaller and larger than that of the standard classroom of 60m2. Perhaps we will make the school building the theme of one of our common days of planning. If following thorough deliberations of needs and possibilities, you arrive at well founded proposals for changes in the buildings, these will often find a positive response from the decision-making authorities. In the years ahead, we may see more of re-building and less of new building within the educational sector of society."*

9. The existing stock of buildings - this is where it all starts. "First we shape the building, then the building shapes us." These oft-quoted words by Winston Churchill are indeed applicable to school buildings. Probably the majority of teachers in most Member countries take it for granted that teaching has to take place in standard-size classrooms, which make up the bulk of the facilities of a school. This is the kind of building they were shaped by, as schoolchildren and in their teacher training. But who shaped this kind of building? There are variations of the history of school building, but one fairly common version goes like this: "What we have, in fact, is a 170-year model with a fitful history. In 1806, the English Lancastrian system of batch-process education was introduced in America. The first fully graded public school was introduced in Boston in 1848 with the Quincy Grammar School, a school still in use. A batch of students, fastened to a teacher, in a box, established itself as the norm for the next hundred years, ... Ask almost any child to draw a plan of a school and he will draw a large box around a series of smaller, equal-sized boxes, set side by side."**

---

* Oddvar Vormeland to the teachers in the County of Oslo and Akershus, Norway, August 1974.

** High School: The Process and the Place, Educational Facilities Laboratories Inc., New York, 1972, page 11.

10. One could, of course, go further back than this. In the beginning was the one-room school (or, in a mild climate, the tree under which the teacher assembled his flock). Basically, the modern school is still a multiplication of one-room schools, placed along corridors, possibly also heaped upon one another in two or more storeys. Gradually some specialised facilities were added: the gymnasium, the laboratory, the rooms for administration and staff, possibly workshops and studios, a library. But the core is still the classroom, which in the beginning was the one-room school. Together these box-like classrooms form the 'egg-crate' school, to change the metaphor - but they remain the 'little boxes all the same', as in the popular song. Certainly, for a long time the 'egg-crate' school offered quite adequate physical facilities for school systems which wanted to sort children according to age, grade and ability into equal-sized groups in buildings assigned for various purposes, such as primary or secondary schools, or schools which were to give a general or a more specialised, possibly vocation-oriented education. To quote again from the EFL publication, referred to above: "For a long time, the repetition of the boxes was not without logic. Their uniform size spaces provided an efficient way of sorting people into uniform size groups according to age, grade, or some other fixed criteria. A group of 25-30 pupils constituted a class. The entire class was instructed in the same way by an omniscient lady deemed to be uniformly able in all subjects. She talked while the children sat and listened. And under the circumstances, the physical arrangements were functional."*

11. This is no longer true. School systems are being reformed and new educational programmes developed. New media are at hand. But school buildings remain the same, and even new buildings modelled on the old pattern are added to the existing stock. At the same time, schools of new types are being built, more or less carefully designed to serve new programmes.

12. The present section will deal with existing school buildings designed to serve educational programmes now abandoned. This is not to say that buildings of the old type cannot be made to serve new programmes. Still less can it be said that there is only one kind of building capable of supplanting the old 'egg-crate' school. But the arguments will be based on the assumption that the traditional school, used in the traditional way, impedes the realisation of new educational objectives, such as the democratisation and individualisation of education. The traditional building is not neutral. The building shapes us, it shapes the education which goes on in it and many educators seem unaware of this fact. Not all, of course. This was shown by a survey carried out in the United States, in which it was reported that "almost a third of the schools say they have been substantially constrained during the past five years in designing new educational programmes by limitations in their physical facilities".**

13. A third of the schools in 45 large cities in the United States complained - but still only a third. The remaining two-thirds were also challenged to create new educational programmes in order to realise new objectives. One does not know,

---

* Ibid., page 11.

** A Profile of the Large City High School (survey of 700 high schools in the 45 largest cities), National Association of Secondary School Principals (NASSP), November, 1970, quoted on page 12 of the EFL report referred to earlier.

of course, how many schools are housed in buildings designed for new educational functions. But one cannot help suspecting that quite a few of the two-thirds of the schools which did not say they were constrained by limitations in physical facilities are housed in old buildings but have not really tried to carry out new programmes in them. The buildings shaped them and they may not even have noticed. Traditionally, teachers are used to viewing their job in education as a personal teacher/pupil or teacher/class relationship. Besides this their main concern has been with subject content, although gradually methods of transmitting content to pupils and training skills have also become objects of serious consideration. Until lately it has been taken for granted that schools are organised in grades and classes allotted to classrooms (or possibly subject-oriented rooms). Questioning of the traditional organisation is fairly recent, and usually only then does the teacher become aware of space, not as a neutral and self-evident factor but an asset or a liability for the work he wants to do. Thus, a prerequisite to a more active relationship between teacher and physical environment is the active relationship between teacher and educational objectives. Some teachers have not even discovered that the school building could be a constraint. Still less have they started to find out how it could be made a help.

14. This, of course, could reveal a fundamental resistance to any kind of educational change. There are also, at the other extreme, those to whom education in present-day society is all wrong anyway, since society is all wrong, so why bother to change school buildings? But the concern here is with teachers who start to use new methods or even to develop their own (as individuals or, more often in teams) and who experience the shape of the building as a constraint. In this situation teachers react in different ways. Some of the attitudes they may reveal are the following:

- Quite a few teachers would like to try new teaching methods, new media, but soon find out that the building is a handicap. They need more space for group work or project work than the classroom provides; no manual work can be done except in specialised rooms, open only to specialised teachers; the music instruments are all in the music studio and the paints and clay in the arts studio. Classroom doors open only into corridors; books and projectors have to be carried a long way. There is one type of teacher who, before he has discovered more than a few of all the physical constraints that the building and the placing of equipment and the lack of suitable equipment puts in his way, has resigned himself to not trying, and to going on doing things the way he always has done. Nobody is there to encourage him, to suggest alternative ways of using equipment or furniture. He will be the teacher who will say for a long time to come: "If only I had been given the possibilities others had, a different building, new equipment or whatever, I would have started something new". This of course, could be a way of hiding a fundamental resistance to change, but the teacher in this case has had, at least at some point, a sincere desire to try something new. But too soon he will have given up and developed <u>a resigned attitude</u>.

- His bolder colleagues may find it more difficult to resign themselves to passivity. But they tend to adopt what in the report on the 1973 PEB Symposium is called "<u>the additive attitude to space</u>", meaning that "... any

new activity requires new space and facilities to be added to the old".* They will issue an ultimatum to their superiors: if they get the use of one more room or are given a better laboratory or a workshop or a resource centre or ... they will work in a different way and begin to fulfil new educational objectives. This may be the voice not only of individual teachers but of associations of science, arts or language teachers or even of heads of schools, who can - all of them - think only in terms of renewal through addition to what they already have. . Of course, they may be right. But in other cases it would have been possible, with imaginative thinking and action, to adapt existing facilities for new purposes - without additions. Often what was needed may well have been contact with experts in building and design, but authorities made no effort to provide such help. All too often, then, even the more active teachers, even the profession as such, join the resigned group.

- However, there are also many examples of teachers, of small groups of teachers or staffs of schools, who, with or without the encouragement and assistance of the responsible authority, bear witness to an imaginative, even creative attitude. They develop constructive solutions to the problems posed by the physical facilities in which they have to work.

15. There are many examples of how, in England, efforts to create new educational programmes have led to constructive changes in the utilisation of old buildings. In his book, Trends in School Design, Eric Pearson tells the story of what happened about two decades ago in Oxfordshire. "In the middle 1950's, as the emphasis in education moved from teaching to learning, there began a movement to establish local groups of primary teachers to discuss their objectives and to exchange experiences about new methods of working. It started with informal meetings, arranged by the authority's officer and adviser for primary education. These were warmly welcomed by teachers, working in an area where it is easy to feel isolated from the main stream of events. Other educational officers and advisers joined in, and visits were exchanged between one school and another. Ideas spread as teachers made bold experiments in creating a new kind of learning environment within their old buildings. At the same time the authority wished to carry out modest improvements to old school buildings, which they were able to discuss with the teachers, and were experimenting with a new kind of furniture. The raising of standards of work also came under discussion, and conscious efforts were made to improve the quality of aesthetic experience for the children, by exposing them to good design and fine craftsmanship in many and varied forms. The response of the children was tremendous and their work blossomed. As a result, the county nurtured a breed of teachers who were not only receptive to new ideas, but who initiated and developed them. Many architects were inspired by the vitality of the work in the schools."**

---

* Eric Pearson, School Building and Educational Change, OECD, Paris, 1975, page 46.

** Eric Pearson, Trends in School Design, Macmillan, London, 1972, page 27. See also S.C. Mason, In Our Experience, The Changing Schools of Leicestershire, Longman, London, 1970, page 10 et seq.

16. As an example of what could happen, the Brize Norton village school, "a lofty stone building with heavy mullioned windows, erected in 1871", is described as follows: "... a large window was lowered to the ground level to give access to an outside working area, and a partition wall was removed. Part of the ceiling was lowered to reduce the scale of the interior. The installation of a cooking stove and a sink, the building of some low wall seating and wall storage, and the provision of new tables, chairs and mobile storage units by the local authority, all assisted in the transformation. The headmaster created a sitting-room by building a light partition and bringing in a sofa, a rug and a low table. An excellent library space was formed similarly. The outcome was a fluid arrangement of learning areas offering a variety of educational experience for the forty to fifty children in attendance. At the same time, improvements were made to the kitchen, cloakroom and sanitary facilities."*

17. Somewhat similar yet very different examples from small village schools in the United States e.g. in Vermont, Pennsylvania, could also be quoted. In these villages "the little red school house" still exists, but thanks to the potentialities of modern technology the children are offered opportunities similar to those which a larger school in a city might have provided. Electronic communication has proved to be a substitute for additions to the school-house. Though far off in a small Vermont village, these children really grow up in the computer age with a mini-terminal in their school and get used to advanced techniques open to few of their city peers in their own country or in others. The one-room schools are also considered as being 'without walls', as the possibilities offered by society at large are extensively exploited.

18. Several basic goals have been identified within the so-called NASSP Model Schools Project in the United States. Examples are: to create and provide varied strategies and environments to match individual differences among learners and among teachers; to define teacher roles (as distinct from aides and others) more sharply and to change the principal's role to one of participant in educational improvement work, leaving management functions to others; to sort out essential learning objectives for pupils and to reduce what is required, thus allowing pupils more opportunities for pursuing their own interests; and to develop better methods of evaluation.

19. Among possible means for achieving these goals and for procuring the necessary resources, the leaders of the project, J. Lloyd Trump and William Georgiades, propose new ways of using facilities: "Reduce over-crowding by introducing more independent study, large-group instruction (presentations), and small-group discussion.

(i) Remove a wall between two classrooms and substitute chairs for school desks (arranged in semi-circular fashion to face the presenter now stationed in the front, on the window side now covered by a curtain or green paint); this facility houses twice as many pupils as in conventional classrooms.

---

* Pearson, op.cit., For a more detailed description of how, in the English primary school, teachers changed the physical environment, see page 29 et seq.

(ii) Install two partitions in a conventional classroom to produce three small-group discussion rooms, substituting chairs in a circle for school desks; this arrangement accommodates 50 per cent more pupils in the same space.

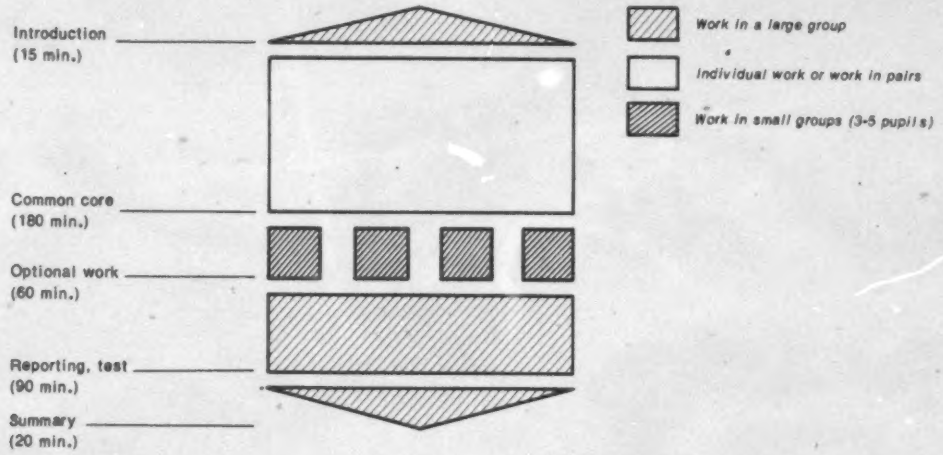
(iii) Change classrooms into study and work centres for independent study; schedule more pupils for some supervised study and work in the community, with appropriate arrangements for accountability.

(iv) Convert corridor, lobby, and cafeteria spaces into independent study areas; pupils can walk through such areas while other pupils are working, especially under flexible and individualised schedule arrangements."* .

20. In Sweden, as the new 9-year comprehensive basic school, "grundskola", brought together pupils of widely varying interests and intellectual ability in heterogeneous, unstreamed classes, teachers were advised to individualise instruction and at the same time provide social education. Different methods were tried out. In certain subjects programmed material helped the individualisation process; mathematics was a case in point. Other subjects, such as science and social studies, proved more suitable for work in groups of flexible size, team work of teachers, varying activities and the use of a multi-media approach. As these various methods were tried out during the late 1960's the old school buildings often proved ill-suited to new demands.

Figure 1

DIAGRAMMATIC INTERPRETATION OF THE BRÄNNAN SCHOOL EDUCATIONAL MODEL



---

* Anna Hyer and Robert McClure, "The Effect of Innovations on Staffing Patterns and Teacher Roles", New Patterns of Teacher Education and Tasks, Country Experience: United States, OECD, Paris, 1974, page 84.

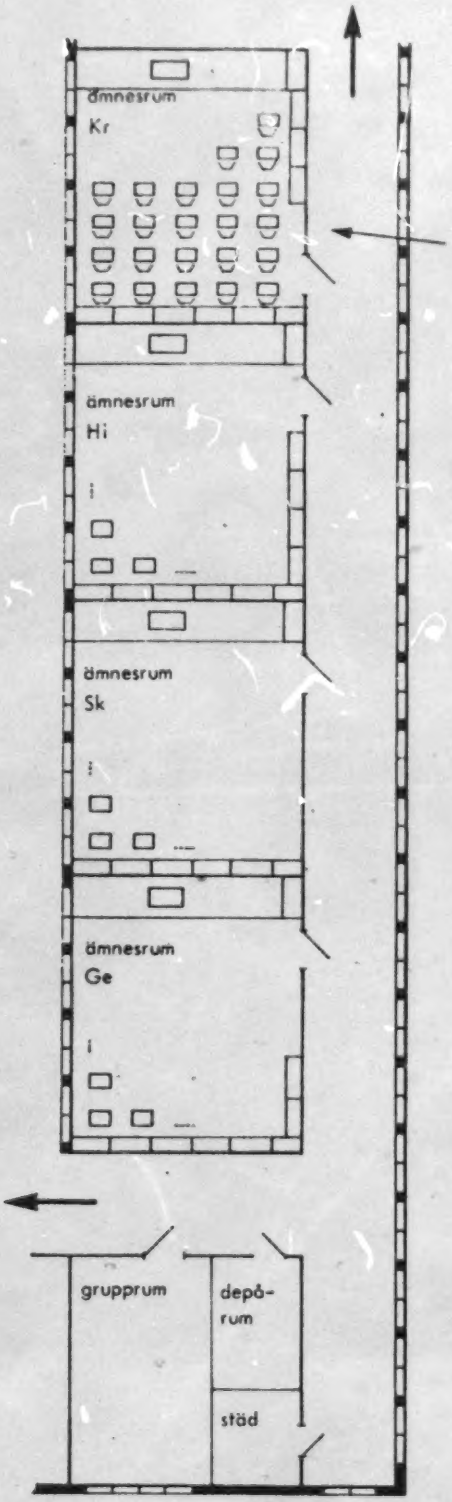
See also J. Lloyd Trump, and William Georgiades, "Doing Better With What You Have: The Model School Project", The Bulletin of the National Association of Secondary School Principals, Vol. 54, N° 346, USA, May 1970.

Figure 2

FROM SUBJECT ROOMS FOR RELIGION, CIVICS, HISTORY

An Example Drawn From the

BEFORE TRANSFORMATION



Ämnesrum = Subject room
Kr = Religion
Hi = History
Sk = Civics
Ge = Geography
Grupprum = Group room
Deparum = Storage
Städ = Cleaning
Hängare = Coatracks

Source : Skolledardag 4, Studiedagshäfte (Material for in-service training of teachers), Svenska Utbildningsförlaget, Stockholm, 1969, pages 20 and 21.

AND GEOGRAPHY TO A DEPARTMENT FOR SOCIAL SCIENCES

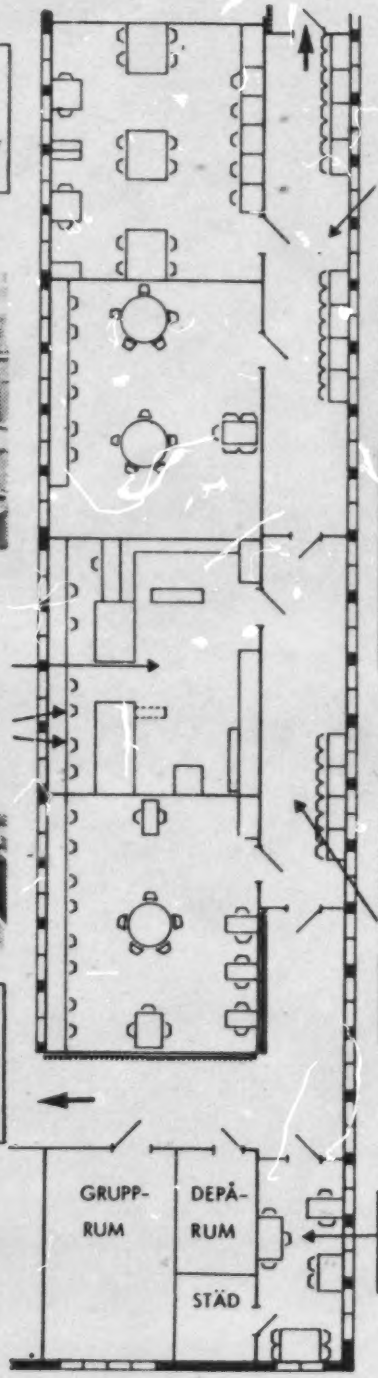
Brännan School, Skellefteå, Sweden

AFTER TRANSFORMATION

In the department for social sciences a room in the middle of the corridor has been transformed into a "materials' bank" housing all the material formerly in the four subject rooms.

Work places for all teachers and teachers' assistants working in the Department have been provided in the new "materials' bank"

Work places for pupils have been provided in the corridor. To reduce the noise level, screening partitions were put up following consultation with the chief fire officer of the municipality who approved the proposed changes from the point of view both of fire protection and evacuation.



At the end of the corridor, a room has been created for the pupils' council and associations.

HÄNGARE

21. In the Brännan school, Skellefteå, an educational model for work in science and social studies was developed. Three teachers would work in a team with ninety pupils (three traditional classes), forming a 'work-unit'. The whole unit would receive introductory instruction for a project, then go on to study individually the common core material. All the pupils would then work on supplementary material, chosen by themselves according to interest, and the result of their work would then be reported by pupils or groups of pupils, after which the project would be summarised. This model would entail work in groups of varying size, in time spans of varying length. In order to be able to apply this model in what amounted to a traditional 'egg-crate' school, the social studies area with rooms for history, geography, civics and religion but with no storage space for materials, no work-places for teachers and no facilities for individual study by pupils, was transformed. One room was adapted to a study workshop for teachers with storage facilities for books and other materials. Three rooms were furnished with tables for group work and places for individual study. The corridor was equipped with work-places along the windows. This arrangement had to be approved by the fire protection authorities, who also gave their permission for screens to be put up in the corridor to avoid excess noise. At the end of the corridor pupils were given an area for their own council activities.

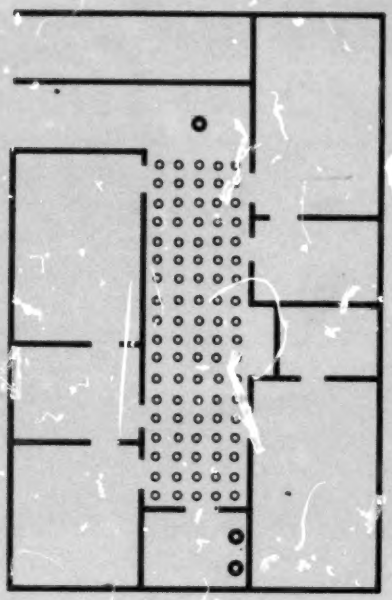
22. In another instance the "grundskola" had to be housed in one of the large old brick buildings, built originally as a primary school. Existing facilities were found to be most inadequate for the needs of the last three years of the "grundskola" (age group 13 to 15, taught by subject teachers). An addition to the old building had to be provided for science teaching. It proved possible to adapt a standard wooden hut containing three classrooms and corridor space to the needs of chemistry, physics and biology. Lack of accommodation for work in large groups was overcome by using a simple internal television installation, so that pupils in all three rooms could receive instruction at the same time, often as an introduction to work in small groups or independent study. For social studies, interdisciplinary work in groups of varying size had to be accommodated. A large corridor between four classrooms (storing materials for history, geography, civics and religion) was used for assembling a large group of ninety pupils. For work in small groups or individual work the classrooms and small areas between them proved adequate. Doors were kept open, and teachers and pupils could communicate and have access to material without disturbing one another unduly. In mathematics, teachers wanted to use programmed material for individualised instruction (the so-called IMU material). Two teachers, with the help of a teachers' assistant, would be in charge of ninety pupils who would work individually with the material. The assistant would be available at a fixed place, in charge of the material, whereas the teachers would be moving around to help and direct children who asked for individual help, assemble small groups for tutoring, and evaluate and plan. As all walls in the old building were load-bearing and thus could not be removed in order to create a large room, the three mathematics classes were placed in adjacent classrooms. To facilitate communication, doors were made to open between these rooms. Further work on the possible adaptation of existing school buildings to meet the requirements of the new 1969 curriculum has been carried out under the sponsorship of Sweden's National Board of Education. This is the so-called LABB project.*

* See Skolhus, Skolöverstyrelsen, Stockholm, Sweden, 1971/72, 2-3; 1971/72, 8, 9-10; 1973, 3.

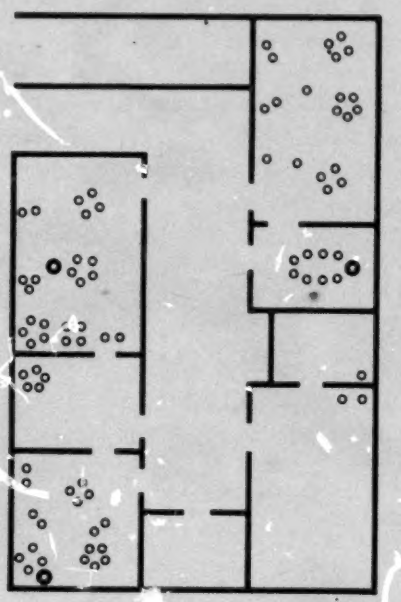
OLD FACILITIES ACCOMMODATED TO NEW WORKING METHODS

An Example Drawn from the Linné School, Malmö, Sweden

SOCIAL STUDIES



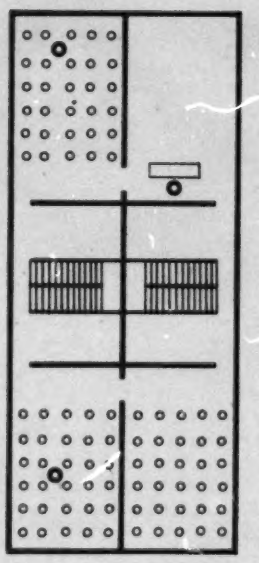
A CORRIDOR BECOMES A LARGE CLASSROOM



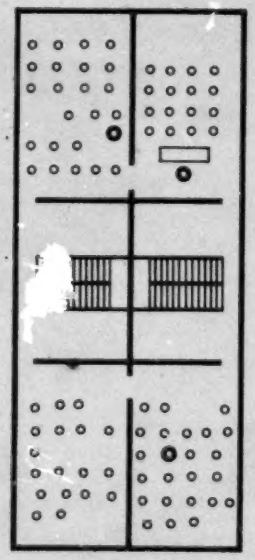
ALL THE ROOMS ARE USED FOR INDEPENDENT WORK AND GROUP DISCUSSIONS

INDIVIDUALIZED INSTRUCTION IN MATHEMATICS (IMU)

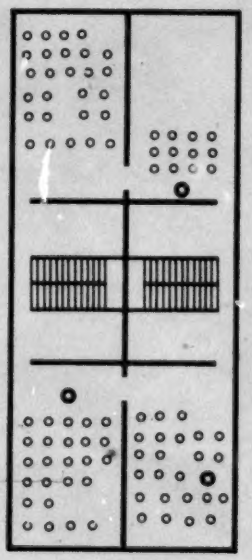
(3 classes - 90 pupils, 2 teachers and a teaching assistant)



INDIVIDUALIZED INSTRUCTION



DIAGNOSTIC TESTING



GROUP INSTRUCTION

Source : *Att bygga för framtidens skola*, en utställning om SAMSKAP, Skolkontoret Malmö, 1969.
Also in English : *Development in Building for the Changing School.*

23. In a French secondary school (collège d'enseignement secondaire - CES), housed in a fairly new but not very flexible building with much less extra space than was afforded by the old Swedish school building just described, the teachers have developed a programme offering the pupils a wider range of activities than those of a standard French CES. The mornings are dedicated to the core programme, in the afternoons pupils work in "ateliers", into which they split up according to taste and places available (from drawing to applied mathematics, or from scientific experiments to pottery). Space for this "atelier" work was found in all possible (and almost impossible) places in the building: classrooms and laboratories, corridors, basements and the school stores. Almost no "atelier" space was ideal for the purpose it was made to serve but the programme was made possible through the constructive spirit of the teachers. Work in the core subjects was also developed and classroom practice was changed primarily towards greater co-operation in groups and individualised instruction. A sequential model is mostly used: a collective phase is followed by a personalised phase of work (assimilation and production), in turn followed by what is called a 'socialisation' phase, i.e. the presentation of the work to the group. This model has made it possible to arrange a traditional type classroom as a foreign languages room where differentiated corners have been created and equipped, the latter by ingenious use of salvaged material. As teachers have to collect and produce material as they go along, the need for storage of material and functional arrangements for documentation is acutely felt, but as yet not met.*

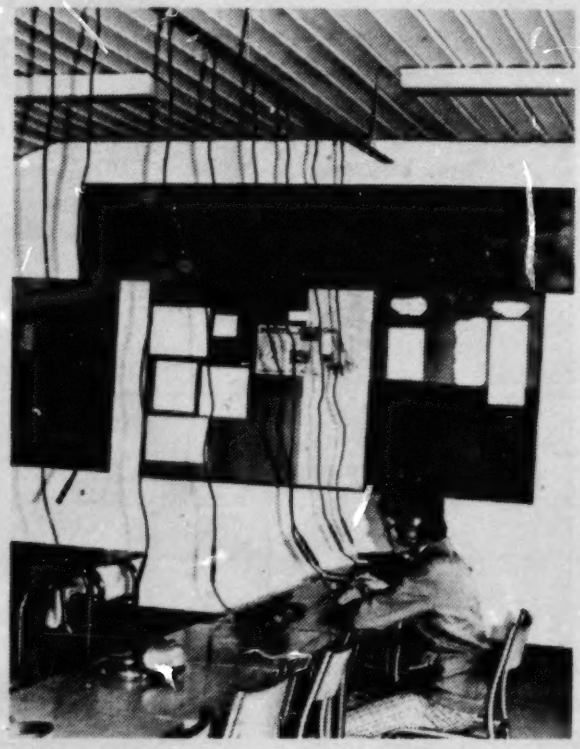


Figure 4

A traditional type class-room transformed into a foreign languages room.**

---

* Jean Ader, Building Implications of the Multi-Option School, OECD, Paris, 1975, paragraphs 19(c), 38, 84 and 88(c).

**Collège de Sainte Maure (France); photograph : Bertrand

24. What then can be done to stimulate in teachers the kind of attitudes, the results of which we have seen in schools in the United Kingdom, the United States, Sweden and France? If one looks more closely at what brought these attitudes about, it is possible to discern somewhat the same pattern, though certainly with variations. Everywhere, and most of the time, there has been an interaction between teachers and local, regional and/or national bodies and officers. Heads of schools, of course, are of vital importance. As teachers try to do new things but feel inhibited by the physical environment and either give up or just demand more space, equipment or whatever, the head is often the person who has to stimulate a more constructive attitude - and show that he himself has one. He and his closest team of assistants (if he has any) are those most directly responsible for the physical facilities of the school and should be able to think in terms of rearranging, regrouping, replacing. He is the person to know who, on his staff, has really got a constructive, even creative mind as to the use of facilities and equipment, and might use this beyond his own classroom or department. In the school of today, probably even more so in the school of tomorrow, teachers develop more and more professional skills of varying kinds, which could be put to the service of all. This is a particular ability which should be encouraged, and which heads should be on the lookout for and help get training for.

25. With (or if needs be, even without) the help of such specialists the head of a school could start asking his teachers such questions as: what is it that you want to do, what kind of space, and how much do you need? what other characteristics do you expect from the space (accoustic or visual privacy or openness etc.)? what kind of equipment do you need - audio-visual, hardware and software, printed material etc.? what can be found in the school already - in other classrooms, other departments? what extras will the budget take? what is really indispensable? what can be disposed of to make room for things that are more urgently needed?

26. This kind of question could be multiplied and certainly formulated more precisely. The important thing is that such questions are asked and that attempts are made to answer them within the school itself, if possible. Only when all possibilities of the individual school have been truly exhausted should the school approach the local authorities - the School Board or whatever may be the appropriate source of authority and funding. It is important the local authorities should not respond to demands until they have made sure that the possibilities of the school have really been investigated, tried and exhausted. Even then it is important that they do not distribute their gifts as from above but that they work <u>with</u>, not only <u>for</u>, the teachers and other personnel in the individual school, or they will never encourage the kind of creativity which one would like to see growing, if possible, everywhere.

27. Many different people could be instrumental here. Advisers - either for different levels of education or for subject areas - could play an important part, as the Oxfordshire example, among others, shows. In Touraine (France) the regional inspector played a leading role in getting the whole process going. In Sweden interaction between local and national administration was important, though most of the initiative was really taken at local level.

28. A procedure which seems to have been rarely used but might have great potential would be to call in architects to discuss with teachers who have started to consider seriously how the physical facilities of their school could be used differently. This would apply not only in the case of major remodelling but also when remodelling might not be a viable alternative. Architects are trained to think in terms of space and its environmental qualities; teachers are not, but they are the people who know for what purpose they want to use the building. Team work between architects, administrators and educationists is now becoming an increasingly common feature accompanying the development of new ideas and design solutions for new school building. More widespread adoption of this kind of team work, directed towards better and more imaginative use of existing facilities, would be of great advantage to everybody concerned. (See also Section D.)

29. Some interesting examples of how this can be done are to be found in the Educational Facilities Laboratories study: New Life for Old Schools. In several cases reported, groups of teachers, architects and administrators were called together for 'charettes'* or workshops with the specific task of suggesting how one or more school buildings might be remodelled in order to serve new educational purposes. Teachers defined educational objectives and described how they wanted to work in order to realise these; administrators defined the economic and legal limitations, architects put forward the physical constraints of the building itself, and lively discussions followed. It was then up to the architects to work out design proposals incorporating the suggestions made by the teachers and administrators.

30. This is a paper about teachers and school building. Very little is therefore said about the role pupils could play in creating new ways of using existing buildings, or about contributions which other school personnel, and parents, too, could make. But it should be remembered that many constructive and creative ideas can emerge if such sources are also tapped.

B. NEW BUILDING - BRIEFING AND DESIGN STAGES

31. Three main parties are involved in briefing and design where schools, or indeed other buildings, are concerned:

- the decision-making authorities, usually the owner;
- the technical specialists (i.e. architects, technical consultants, educational administrators and advisers); and
- the users (teachers, pupils, parents, technical staff etc.).

Traditionally the specialists have carried the main burden. They have formulated the brief, designed and constructed the school building. The role of the decision-maker has been to decide upon the framework, format and cost, often guided by

---

* Places and Things for Experimental Schools, Educational Facilities Laboratories Inc., New York, 1972, page 111: "The term 'charette' is borrowed from the architectural profession where it indicates an intensive effort to finish a project before a deadline. In school planning, it denotes a session of intensive group planning, with community representatives, school officials, teachers, students and designers each contributing and all working to resolve conflicting desires."

nationally or regionally defined norms and regulations. The users have often been put in a 'take it or leave it' position, although a compulsory consultation procedure may sometimes exist.

32. This kind of process is now being challenged in many countries and in some instances virtually changed. Some of the many reasons for this are:

- the decision-maker has become more conscious of his task of defining and fulfilling societal objectives for education, and has gradually come to see school building as part of this process;
- a higher degree of cost-consciousness has emerged and partly as a consequence of this more severe claims are made for the building to meet the functions expected of it;
- the user has come to see the building less as something static and unchangeable and more as an instrument which can promote or hinder the achievement of educational objectives;
- it is becoming generally accepted that everybody is entitled to have a decisive influence on his working environment.

33. In view of this growing consciousness of the roles to be played by 'owners' and 'users' in school building, the 'specialists' may want to object that:

- planning a building is becoming an increasingly sophisticated and complicated process;
- involving the users (it would be harder to object to involving the decision-makers) would entail a probably very time-consuming democratic procedure, incalculable as to its results, hard to reconcile with efficient network planning and therefore, since time is money, also costly;
- it is hard to decide who should be identified as the users: teachers, certainly, but who represents the teachers; who are the other parties and who represents them?; pupils, parents, other personnel, those who will use the building outside school hours etc.? These objections are to be taken seriously but the case for an active involvement is so much stronger that they must be considered as practical difficulties to be overcome rather than barriers to the conscious and systematic development of new procedures in the planning of school building.

34. This paper is concerned mainly with the teachers. The roles of other parties will enter the picture chiefly as they relate to the role of the teachers. Nevertheless it should be kept in mind all along that what we are asking is not only for the monopoly monologue of the specialist to develop into a dialogue, but that forms should be found for something which might be called a 'plurilogue', into which all parties concerned will have the chance of entering.

35. Briefing and design in school building may occur in varying circumstances. An example is the one and only new school that a certain community is going to build for a decade or more. The community might be willing to put a great deal of effort and interest into this unique event but would probably have very little experience to contribute; subsequently, the experience gained may not benefit

many others. Even the architect may go on to quite different kinds of projects and be unable to put to direct use what he has learned from designing the school. On the other hand extensive building projects are undertaken by large education authorities, which would have to find ways of working out a prototype suitable to serial production of several similar or almost similar schools. It would be possible to put quite impressive resources into working out the prototype and to enlist extensive participation from the parties concerned, but it might not be possible for production of each individual school to be the object of such participation. An illustration of this on a large scale is the building programme of the so-called "Mittelstufenzentren" in Berlin, a programme for building thirteen similar schools at a total cost of 620 million DM.* The experience drawn from this building programme can and will be put to use in the consecutive programme of building "Oberstufenzentren" but it will be more difficult to correct mistakes within the respective programmes in the light of the experience gained.

36. The development projects in school building in the United Kingdom, with which the Development Group of the Architects and Building Branch of the Department of Education and Science have been concerned, seem to represent yet another variety of school building planning. The Development Group has been working with local education authorities in designing individual schools, engaging both national and local experts and studying carefully the best educational practice available (see also paragraph 40). Research and development activities have played an important part in these projects, and a number of projects in the normal school building programme have been based, in principle if not in detail, on the development projects, both within the actual authority concerned and all over the country.**

37. The conditions under which teachers can participate in school building under such differing circumstances will vary greatly. Empirical approaches will have to be accepted and even encouraged. The nature of their participation will differ according to attitudes and traditions in individual countries. In discussing these conditions, the differences in the organisation of school building will be borne in mind but cannot be dealt with here. Despite these differences some basic prerequisites will doubtless still apply.

38. Today it is recognised in most countries that teachers should have a say when new schools are to be built. This in itself may be nothing new or revolutionary. In some countries a formal pattern of consulting teachers has been in existence for some time. However, this has often happened only at the stage when the architect has completed his design. It is difficult for teachers to read the architectural plans and visualise what kind of a school will result. Yet a good deal has been achieved, even by observing such a pattern. Naturally, teachers are

---

* U.J. Kledzik (Ed.), Gesamtschule auf dem Weg zur Regelschule: Bildungszentren in Berlin, Schroedel, Berlin 1974.

See also "Berufsfeldbezogene Oberstufenzentren: Konzeption und Planungsverfahren", Informationsdienst Schulwesen 1/1974, Berlin.

** See, for example, Building Bulletin 48, "Maiden Erlegh Secondary School", HMSO, London, 1973; and Information Leaflet N° 2, "Maiden Erlegh, An English Secondary School Development Project", by Clive Booth, Programme on Educational Building, OECD, Paris, May 1973.

interested mainly in two sets of facilities: the rooms in which they will work and the staff-rooms. They will ask: are there shelves for books and boards for display in the classrooms? are the outlets and sinks well placed in the laboratory? will the light be right in the studio? is there enough space in the staff-room? are there workplaces separate from the social area? Many mistakes have been avoided, and teaching and learning conditions considerably bettered through this kind of procedure, which could and should be supplemented by consultation with other personnel, such as custodial and cleaning staff, school health officers etc. Nevertheless, very often those involved in this type of process have come out of it rather dissatisfied, since very little could be done at this late stage, when the main features of design were already settled and it was possible to make only minor alterations. Also there is the question, seldom answered satisfactorily, of who will represent the teachers. Some authorities are used to dealing with committees of teachers, presumably chosen by the teachers' unions. Gradually the members of these committees may develop a degree of expertise, but this does not mean that they would have much real influence. Nor would those who would actually be teaching in the new schools readily identify with them, their own representatives.

39. What one is generally talking about now, and asking for, is a very different kind of teacher involvement. It will have to start much earlier, already at the briefing stage, and aim at the continuous teamwork of all parties concerned. Several fundamental questions arise at this point:

- at what stages in the briefing and design process should teachers be involved?
- what is meant by teamwork in this context?
- what educationists should be included in the design team?

Stages of teacher involvement

40. As it is being realised that teachers ought to be brought in early in the planning process, the design specialists sometimes tend to limit this participation to the opening phase of the briefing stage. They could be brought in in at least two ways. One would be to have the specialists find out what effective practising teachers are trying to do in existing schools. This method is widely practised in the United Kingdom both by the Department of Education and Science and local authorities in their development work. Obviously, someone has to decide who are the most effective teachers, and this, generally, the authorities take upon themselves to do. There are certain avantages in this system as members of the design team, some of whom may not have seen a school at work since their own school days, spend considerable time watching carefully what is done and discussing with teachers on the spot the teaching and learning methods used and the physical facilities needed to promote related activities. Architects, with their expertise in judging environmental qualities, might be better qualified than the teachers to assess what assets or liabilities the building has and what properties a new building should possess. Yet this method of involving teachers seems to leave most of the initiative to the specialists and leave the teachers a rather passive role. Though one would be glad to see it used more widely, there must also be other methods for making the teachers participate in stating their

needs. Another way would be to ask them, as prospective users of the building-to-be, to take part in formulating 'user requirements', to be incorporated in the architect's brief. The practice of including in this brief detailed requirements may vary from country to country, possibly even from one building project to the next, but at least in some countries, and especially in development projects, a good deal of trouble is taken to specify user requirements in great detail. Thus, in the Metropolitan Toronto School Board Study of Educational Facilities groups of teachers were given the possibility of saying what they considered to be the best practice at the various levels of education, and in various subjects, as a basis for the development of the basic brief.* In the SAMSXAP project in Sweden, several groups and sub-groups of teachers were asked to analyse the curriculum of a centralised character in Sweden and to try to interpret it in terms of activities and also in terms of facilities needed.**

41. Such efforts at formulating requirements through user groups are of great importance, and in most countries would imply a considerable step forward in involving the teachers in the planning of school building. Yet a warning must be added against believing that a set of requirements can be defined once and for all, which the designer will then have to meet. In practice, design demands interpretation of requirements on many points of detail, and the decision on how to interpret them should not be left to the designer but should entail the continuous involvement of those who formulated them. In fact, the usual separation of the briefing and design stages may have to be seriously questioned, and possibly abandoned altogether. The designer may still want the users to express themselves in brief and unambiguous terms, and then to leave the scene until the building, or at least the design, is completed. But this is the opposite of the kind of teamwork advocated.

The nature of teamwork

42. Teamwork should involve all the parties concerned throughout the briefing and design stages, or rather throughout the whole building process. All through this long period the nature of the teamwork will be changing, different team members will play the most important part in different phases, but what should be stressed is the desirability of continuous teamwork. This makes it important to try to analyse the nature of teamwork in this context. There is one type of so-called teamwork where each party defines and guards his own territory. Though the parties work alongside one another they never really enter into dialogue or co-operation. For example, the whole burden of interpretation of what teachers mean when talking in educational terms is put upon the architect, who, in his turn, confines himself to speaking in terms of space and environment. Likewise the administrator, the finance specialist, the technical consultant are confined to their respective territories, speaking their own more or less unintelligible language. On the other hand there is also the kind of teamwork in a no-man's-land where roles

---

* See, for example, Educational Specifications and User Requirements for Intermediate Schools, SEF E2, Ryerson Press, Toronto, 1969.

** Bertil Gran (Ed.), "The Open Plan Schools in the Malmö Region" (stencil), Malmö, 1972.

Ader, op.cit., paragraphs 29 (Table 3B), 87, and page 37.

B. Rodhe and B. Gran (Eds.), "A Report on Experience in the Malmö Region", New Patterns of Teacher Education and Tasks, Country Experience: Sweden, OECD, Paris, 1974, page 101.

are mixed, architects talk education on the basis of the experience of their own or their children's childhood, whereas teachers try to express themselves in terms of space and even try to draw, in the literal sense, the consequences of their argument for the kind of school they would like to have.

43. In contrast to these conceptions of the nature of teamwork, it might be possible to lay down some criteria for genuine teamwork such as:

- everyone has his own special competence and responsibility, but decisions are taken together and after open discussion;
- members of the team are prepared, able and willing to discuss all problems with one another as they arise;
- a common language is gradually developed, each party taking care to make sure that he understands and is understood by the others.

44. Teamwork does not free the parties concerned from developing their own expertise or exercising their own competence. Rather, the presence of the other parties with their specific skills represents a continuous challenge to each. In the school building team:

- The owner/decision-maker has to define his needs precisely; he has also to set targets in terms of format, quality, time and cost. He must choose the specialists who will do the actual work, and control proceedings with regards to time, cost and quality.
- The specialists, a complex group are responsible for the development of the brief and design in a formal sense. The leader of the whole team may come from this group and may be an administrator, identical or not with the educationist, who will be responsible for involving the users in the teamwork. The architect and his team of technical consultants are responsible for the actual design, entailing the interpretation in environmental and spatial terms of the requirements of the users.
- The users will need to analyse and describe the activities which will take place in the school, the most important of these being learning and teaching. As these will by no means be the only activities to go on in the building, not teachers alone but also other users within or outside the school community will have to be involved and develop among themselves a sub-team to be incorporated within the larger team.

It is essential that the decision-maker should define clearly the objectives and parameters of the project and that all team members should be clear about what they imply. In some countries, the practice is that innovative schools have to respect the same cost ceilings as traditional ones. In others this may be impossible; it is nevertheless important that those who bear the overriding political and financial responsibility should lay down the conditions for the work in advance while remaining, however, available for consultation throughout the process.

Figure 5

AN EXAMPLE OF ORGANISATION OF THE DESIGN AND IMPLEMENTATION OF A PROJECT

Stage ↓ / Specialist →	Administrator	Educationist	Architect	Builder	Consultants
(1) Initiation	●				
(2) Basic programme	●	○			○
(3) Programme	○	●	○		●
(4) Design		○	●	○	○
(5) Building			○	●	○
(6) *Feed-back*	○	○	○	○	●

○ specialist in the team
● specialist takes a leading role

Source : The Educational Aspects of School Building, Council of Europe, Strasbourg, October 1971, page 66.
Jean Ader, *Building Implications of the Multi-Option School*, OECD, Paris, 1975, page 52.

45. When the decisions are to be taken, and as they are to be taken in common, it is essential for each party to take his stand according to his own competence but at the same time to enter into the real give-and-take of the dialogue. This is how one architect describes what may happen: "The user is made aware of a problem which in the traditional process the specialist, the architect, would have resolved for himself. His decision would affect the use of the building intimately and the user would have risked being greatly dissatisfied. If made aware of the problem, of the conflicts it raises and of possible alternative compromises to overcome them, then, the user may see that he himself by perhaps modifying his own activities, can solve the problem by removing it or by transferring or transforming it into different terms in such a way that it can be solved by architectural means. Then again, when he sees how the architect's mind is working, he discovers new possibilities not previously imagined. This is how user and architect become involved in a creative dialogue, each stimulating the other."

46. The development of such a 'creative dialogue' cannot possibly be limited to what is usually called the briefing stage. As said before, the briefing and design stages tend to merge. Only when the design is complete does the dialogue end, and only when the dialogue has ended can the brief be considered as complete.

Furthermore, there is a case for continuing the dialogue throughout the building process and letting it be followed by continuous co-operation of the parties involved, even after completion of the building, and on into its occupation as a school.

47. The concern here is mainly with such new school buildings which aim at realising new educational objectives. These in turn, are generally defined by policy-makers at a level higher than that of the building authority. It is necessary, therefore, to translate these educational objectives into functional and operational educational models. The specific task of the design team during the briefing and design stages would be to determine the facilities needed for their realisation. The extent to which the team would have such models at its disposal would vary. In some countries the task of translating objectives into educational models is performed mainly by central authorities in charge of curriculum development; these may also take the responsibility for establishing corresponding norms and guidelines for design. In others, the main burden of this work may rest with the design team for the individual school, and the school building authority then has to ask the team to translate the educational model into physical facilities for that particular school. In between these extremes there are, of course, many variations. However, bearing in mind these differences, the operational and and functional educational models would have to be defined at some level as a basis for determining the necessary facilities. In what terms should the model be described, or, in other words, what is the point of departure for the brief? The answer to this will define the task of the design team, and, more specifically, the task of the teachers on the team.

48. This question was discussed at length in the PEB report on the Building Implications of the Multi-Option School* and an attempt was made to answer it. It is, the report maintains, the activities to be performed in the school which constitute the key to briefing. But this key in itself calls for what the report describes as 'a multi-dimensional analysis'. An analysis of the complexity of activities must be made: as to their being observable, desirable or just possible; as to their characteristics, and as to the field to which they belong - school, social life and leisure, community use of the school building. This analysis of their nature, characteristics and value would result in a typology of activities. These might then also have to be arranged in sequences and sets. Only thus would it be possible to determine the type or, rather, sets of facilities, which would correspond to the sets of activities agreed upon. The quantification of facilities would follow, taking into consideration norms, cost limits and other constraints (such as fire regulations). Even with such a long and careful process there can be no absolute certainty in the series of decisions which have to be taken to complete the briefing and design stages and build the school. In some sense, the design of a school building must remain "an open task" and allow for "a certain indetermination" which should "not be confused with hazardous approximation".**

---

* Ader, op.cit., paragraph 76 et seq.

** Ibid., paragraphs 108 and 114.

49. Teachers will obviously have to be involved throughout the process outlined above. It is not possible to divide this process into different stages, for example one in which teachers describe their requirements in terms of activities resulting from an educational model, and one in which architects translate these into physical facilities. The process will have to be carried out by means of constant dialogue between team members. The teachers engaged in the team would have to describe teaching practice in terms of activities and undertake the kind of multi-dimensional analysis referred to above. Those teachers who have themselves played an active role in changing their own physical environment in existing buildings would probably be those best suited for this task. In developing and trying out new educational models they would often almost literally, have knocked their heads against walls, and may have contributed to walls having been moved or removed. It was presumably teachers with this kind of experience who were asked to join the SEF and SAMSKAP teams mentioned earlier. When the design team responsible for working out the prototype for the Berlin "Mittelstufenzentrum"* was set up, only teachers from "Gesamtschulen", active in trying out new educational models, were chosen. On the whole, the kind of teamwork outlined in this paper can only apply to development projects or large building programmes. However, in the case of the building of an individual school too, the innovative experience of teachers would be well worth taking into consideration. In Oxfordshire the new primary schools grew out of the kind of educational renewal described in Section A. The Touraine teachers, also, knew well what kind of a school they would build were they given the opportunity to participate in the planning of a new school.

50. A warning should be added here. Conclusions have sometimes been drawn too simply and too hastily from teachers' analysis of their educational model. Architects may be misled into following too closely the ideas put forward by teachers and as a result the matching of facilities with activities may become too simplistic. The following conclusions can thus be drawn:

- The design of a school should not be based on one educational model only. As far as possible the provisional design should be tested against alternative educational models to assess its flexibility. This conclusion is based on the experience that buildings constructed to conform very closely to one specific educational model are the most difficult to adapt to the use of other models.

- The whole theory and practice of translating educational objectives via educational models into facilities needs to be developed. This is an important field for research and development. An international organisation could play an important and, possibly, a unique part here by bringing together experience from different countries and identifying the really relevant issues, putting aside factors of a purely national character.

- The possibility of applying alternative educational models in a school building raises the whole issue of flexibility and adaptability, which is the object of still another PEB activity.** The initial findings of this

---

* Kledzik, op.cit., page 112 et passim.

** Providing for Future Change. Adaptability and Flexibility in School Building, OECD, Paris, 1976.

work indicate that school buildings, under certain conditions, may house more alternatives than is generally thought.

Educationists in the design team

51. The educationist in the design team was once defined as "someone who is familiar with the broad strategies and objectives of educational development but who, at the same time, is familiar with the daily problems of practical teaching and with any current innovations which attempt to solve them".* This definition has been contested, it being argued that it cannot be "within the capacity of one person to perform fully and efficiently the tasks which have been expected of the educationist of the past. Continuous tapping of the well of experience in the shape of those teachers at the spearhead of educational innovation is now essential to the work of design teams." But "these people work largely by intuition, are not always articulate and are sometimes to be found in obscure places". A plea is made for educational building "to construct its own special bridges linking it with the teaching profession to make the briefing dialogue more fruitful than hitherto. Design teams needs to be seen in touch with the practice of teaching at the frontiers of education."**

52. It seems possible to reconcile these views. Granted that several people will be needed to represent "the well of experience" to be tapped, there is still need and room for the educationist who is familiar both with broad strategies and objectives and practical problems and innovations. He will usually belong to the group of specialists and he will have to act as a co-ordinator vis-à-vis the representatives of the users. To this person belongs the task of locating "the frontiers of education" and finding the people who work there. He may be the educationist/administrator and, probably, will also be the person responsible to the decision-makers for organising and maintaining satisfactory relations with the teaching profession. This task will not always be without its complications.

53. How then are the teachers who are to serve on the design team to be nominated? Most school building authorities will reserve to themselves the right to define "the frontiers of education" and to seek out the teachers who would seem to work at these frontiers and be of most use on the design teams. They will also have to reserve to themselves the responsibility of weighing the claims put forward by teachers against those made by other users of the building, claims which might be defined in terms of wider societal goals than educational ones.

54. At the same time the teachers' unions are putting forward claims to be consulted. A recent publication by the National Union of Teachers in Great Britain*** recommends that "local education authorities should take their teachers into the fullest consultation from the very beginning, and should make every effort to achieve a solution that is completely acceptable to their teachers. In this, as

---

* Guy Oddie, Development and Economy in School Building, OECD, Paris, 1968, page 13.

** Pearson, School Building and Educational Change, op.cit., page 46.

*** Open Planning, a report with special reference to primary schools, a NUT discussion paper, NUT, Hamilton House, London, 1974.

in other cases, the executive interprets consultation as an on-going dialogue between the authority, and the representatives of the teachers' professional associations. It rejects as unacceptable the calling together of an unrepresentative collection of teachers on an ad hoc basis. It also rejects the practice of interpreting consultation as a mere matter of allowing heads or others a sight of already formulated proposals and finalised drawings." Although there are examples of schools in the United Kingdom which have been designed by local education authority architects in close consultation with teachers, a survey of current practice, reported in the above publication, seems to indicate that the recommended type of consultation is still very infrequent and that, many schools are still built without teachers being consulted.*

55. In Sweden similar claims from unions are substantiated by the existence on the labour market of a general agreement on the creation of what might be translated as 'joint consultative committees' (företagsnämnder). Under this agreement all personnel are granted the right to exert influence on their working environment. In accordance with it, a Swedish local authority recognised a school building committee, elected by the joint consultative committee, as a partner to be consulted on all projects of school building.** The authority (in co-operation with the city's Central Building Council) appoints the actual design team which, consists mostly of specialists but also includes some teachers, chosen by the authority itself. The design team continuously forwards its proposals to the school building committee, which can discuss the emerging design both in its totality and in detail. As the joint consultative committee includes representatives of all school personnel, the school building committee elected by it also has wide representation, and this committee becomes the potential forum for the kind of 'plurilogue' referred to above. Though at first each member tended to represent only its own group and its interests, a team spirit has evolved in the committee as each learns from the other and all learn from the design team, which in its turn learns from the committee. Thus the total environment of the future building becomes the concern of the whole group, which then becomes a constructive partner in the development of the design and in the actual building of the school. Owing to the fact that the school building committee is constituted under the agreement on joint consultative committees the inclusion of parents and pupils is not possible. However, parents have constituted a school building committee of their own, which is in contact with that of the school personnel. Contact with pupils and their organisations is secured in other ways.

56. Any union with representatives in design teams risks - if it considers it to be a risk - their representatives identifying themselves with what may become an 'in-group'. To counteract such a process unions may instruct their representatives to take each issue back to their responsible committee, a procedure which

---

* Ibid., page 14.

** The procedure was developed in Malmö as a means of handling the conflict which had arisen with the teachers' unions over the building of open plan schools within SAMSKAP. Local representatives had published a study called SAMSKAP - projekt med många frågetecken (SAMSKAP - a project with many question marks), (stencil), Malmö, 1972, in which the need for school buildings of new types was recognised but the layout of the schools built so far questioned.

would tend to become slow and inefficient and endanger all real teamwork. This might lead authorities to adopt a somewhat different policy towards consulting unions. They may ask them to appoint reference groups linked to the design teams or to single members, so that the results of the work of the teams can always be checked against the opinion of elected teacher representatives. In the case of the design of the Berlin "Mittelstufenzentren" a most comprehensive reference committee was appointed with representatives not only of teachers' unions but also of the administration (Senatsverwaltung), the universities, staff and pupils in existing "Gesamtschulen" etc. This committee started its work by defining the conditions of the competition before the architects were appointed and the actual design committee began to work, but their function as a reference group was maintained throughout the building process.

57. In years to come, building authorities will probably find themselves caught up in the dilemma of the demand for democratic procedures as against their own desire for maintaining autonomy of decision. Few authorities will enter into conflict with the elected representatives of their teachers with their eyes open. They also have to consider the demands of groups in their service other than teachers and, above all, ensure that the overriding educational and societal objectives which the schools are to serve, are met. Possibly, all partners concerned will recognise what these overriding objectives are and that they may not best be realised by a kind of continuous consensus procedure. Also, the unions will possibly acknowledge that a constructive attitude is needed on the part of all those involved with school building. As one union representative put it: "Our cause is not served by our just saying 'no' all the time". This may bring unions to put in work of their own on issues of school building and, by this and other means, seek out teachers with a special interest in and ability for educational development and school building who can participate in the work of design teams or consultative committees. The ultimate responsibility of course rests with the decision-maker - the local education authority - which is politically elected and legally carries the burden also for administrative and financial matters. Furthermore, the educational policy of the authority may not always coincide with that of teacher, parent and student groups which in a democratic context may create a dilemma. The growing strength of organisations and unions tends to accentuate this dilemma.

58. Each building authority will have to decide for itself how fast it wants to move towards "the frontiers of education" without being sure of having the majority of their teachers behind them. Some authorities may want to risk taking 'the great leap', possibly in development projects, whereas others will prefer to move slowly, making sure of the backing of the majority of teachers. It may be possible to strike a balance by adopting what is sometimes called the MAYA principle, defined as 'most advanced - yet acceptable'.

59. No special reference has yet been made to the teachers who will actually be working in the schools to be built. In some countries there is a rule that their consent to the design should be secured. However, in many cases, it will be impossible to establish who these teachers are at the time when the brief and design are being worked out. In the relatively few instances where this is possible, it might happen that this group of teachers will identify themselves neither with the opinions of the design team nor those of the unions, should these differ.

There is no easy way out of this dilemma. Section F deals with the training of teachers for serving in new schools; information and in-service training, however, may help to solve the dilemma. Yet the decision-makers may need to manoeuvre a good deal both to build for the future and to obtain the consent of those who will be the first to work in the new buildings. One instance of a happy solution illustrates this. A secondary school project in a Dutch city met with several difficulties, one of which was the concern of the staff over the 'too progressive' views which they felt were held by the specialists. Educational consultants were called in and they started a process of innovation in the existing school entailing project-oriented teaching and team teaching. At the same time the brief was completed under close co-operation with the head and staff, who were then more motivated for wanting a school in which new educational goals and methods could be put into practice.* In summary, insofar as teachers on design teams learn to generalise - not only from their own pedagogical experience but from supplementary experience too - and to apply general educational objectives to the development of facilities (cf. paragraphs 47 - 50), the results of their work ought to correspond to the needs of the teachers who will practise in the new schools.

60. Whatever pattern is chosen for involving the teachers' opinion in the briefing and design stages, special training in this field should be offered them. The experience which teachers have gained through their own teaching and their own development work will have to be put into perspective through the experience of others. Teachers, as well as other members of design teams, should be given possibilities of study visits to regions and schools where different patterns and models are developed; if possible, in other countries. This will give them the chance of viewing their own practice from the outside, and to see that things can be done differently. It is especially desirable that the other members mentioned above should include architects, too few of whom have sufficient knowledge about everyday life in schools, but most of whom can be expected to respond well to the stimulus such knowledge would provide for finding appropriate design solutions. The teachers too will also gain clearer insight if they are accompanied by architects and can observe their reactions, while at the same time the joint visits will spark off the dialogue it is necessary to promote. If possible these study visits should involve not just a day or two, but the opportunity of following the work in good innovative schools for a period of a week or so.

61. Furthermore, the members of the design team should have access to documentation in the school building field. It would be a good initiative, preferably at the regional level, to assemble material on school building - books and other printed material, slides and other pictures, blueprints etc. - and make this available to members of design teams. PEB might help by pointing out a basic stock of international material from various Member countries. The UNESCO documentation centres for school buildings too, might be of help in this connection.

---

* The example refers to a project carried out by the Stichting Informatiecentrum voor Scholenbouw, ICS, as consultants to the school building authority in Maassluis near Rotterdam. Other patterns of co-operation between design team (the ICS) and teachers are described in the International School Building News, 7/1973/N° 1, "Development Project Low-cost Comprehensive School in Lelystad", and in the Information Leaflet No. 8, "Den Helder, a Dutch Secondary School Development Project", Programme on Educational Building, OECD, Paris, (to be issued in 1976).

62. Design teams - whether of an institutionalised character or created for the building of an individual school - could do well to start their work by holding brainstorming sessions; possibly in the form of the 'charettes' described earlier, before proceeding to more structured tasks. The work on the building programme for the Berlin "Mittelstufenzentren" started out with a brainstorming session of 45 people, including all members of the Senate administration for education to be involved in the planning, district administrators, heads of schools and teacher representatives. The session went on for several days and had been planned by a university department, which was also responsible for giving continuous advice throughout the process. The immediate result for the responsible administrators was to work out a network covering all aspects of planning the centres.*

63. Finally, it should be underlined that this pattern of study visits, study of material, and brainstorming, could and should be repeated several times during the briefing and design stages, as insights grow, problems appear and the co-operative spirit of the team develops - but it may need new challenges and the input of outside experience.

C. NEW BUILDING - FURNITURE AND EQUIPMENT

64. "With the current evolution in teacher/learning methods and the rapid development of new educational technologies, furniture and equipment and if anything more important educational facilities than the school building itself. Furthermore, the kind of furniture and equipment needed and the way that built accommodation is planned and serviced are to a large extent inter-dependent. Yet, too often the building is conceived and detailed with little certainty of how it will be furnished and equipped, while responsibility for the choice of furniture and major equipment may rest with a purchasing service which has little knowledge of modern educational requirements."**

65. This quotation demonstrates the case for a special paper on teachers participation in planning the furnishing and equipping of a new school building. In this paper it is only possible to underline the basic principle that furniture and equipment planning should be an integral part of the total planning of the school building.

66. Much too often the furnishing and equipment of the building follows the briefing and design stages and runs parallel to the building stage but has no organic relationship to either activity. Very often the decision-makers have to take decisions on furniture and equipment involving considerable financial consequences, with no real information of what might follow if the type of furniture is changed or some pieces of equipment, of audio-visual material, say, left out. Thus teachers who have participated in planning the building for the realisation of generally-adopted educational models may find themselves robbed, at a very late stage of the decision-making procedure, of the very tools which they had deemed necessary, and for the provision of which the building was designed.

---

* Kledzik, op.cit., page 37 et seq.

** Information Leaflet N° 4, "ff5 - A Canadian 'Casework' or Furniture and Equipment System for Schools", by Paul Lenssen, Programme on Educational Building, OECD, Paris, March 1974, page 3.

67. To facilitate rational acquisition and positioning of teaching aids and provide the decision-makers with an instrument for judging the relationship of the teaching aids to the realisation of the educational model adopted, the Swedish LINS project was set up.* A method was elaborated for analysing activities relating to the educational models developed to realise the 1969 central curriculum of the "grundskola" (Lgr 69). Teacher and pupil activities are described and related on the one hand to overriding objectives and on the other to facilities and teaching aids, especially the media. A specific administrative decision-making model has been developed on the basis of these analyses to enable administrators and decision-makers to judge the possible effects of cutting the budget, or leaving out certain teaching aids, etc., on education. The LINS model for equipping a new school building was elaborated by groups of teachers working with administrators, architects and personnel from the purchasing service. Similarly the manual, which was the tangible result of this co-operation, would serve to instruct the same categories of personnel charged with equipping a new school or set of schools. Thus the three main groups of the team - described in Section B - the decision-makers, the specialists and the users, have at their disposal, thanks to the LINS project, a model for their co-operation in equipping the school.

68. While the LINS project concentrated on working out a system for equipping the new building with the right kind of educational 'hardware', the SEF project in Toronto, Canada** considered the 'casework' in the school, that is furniture, such as cupboards, counters, lockers and storage facilities, as a sub-system of the building. As tendering documents were worked out for each sub-system, each relating to the main objectives of the SEF building system, the following main objectives were defined for the 'casework':

- to ensure that the design and use of caseworks will interface with and supplement the total design flexibility of the SEF technical sub-systems;
- to ensure that the design and use of caseworks will support the increasing educational demands for variable sizes of learning spaces to accommodate varying sizes of pupil groupings using many different forms of learning materials and equipment;
- to provide the school boards in Metropolitan Toronto with the opportunity to purchase caseworks in a comprehensive and systematised fashion in order to effect greater economy; and to permit interchange of equipment between the boards when required.

Characteristic of the SEF is the early involvement of teachers in the definition of educational requirements. As architects translated these requirements into facilities, to be system-built, the question of how the schools were going to be equipped entered early into the deliberations. The architects did not themselves design the furniture but drew up the performance specifications submitted for tender by manufacturing firms. Thus, the ff5 (the free-form-five sub-system of caseworks) came into being and, on the whole, has been positively received by teachers, who have

---

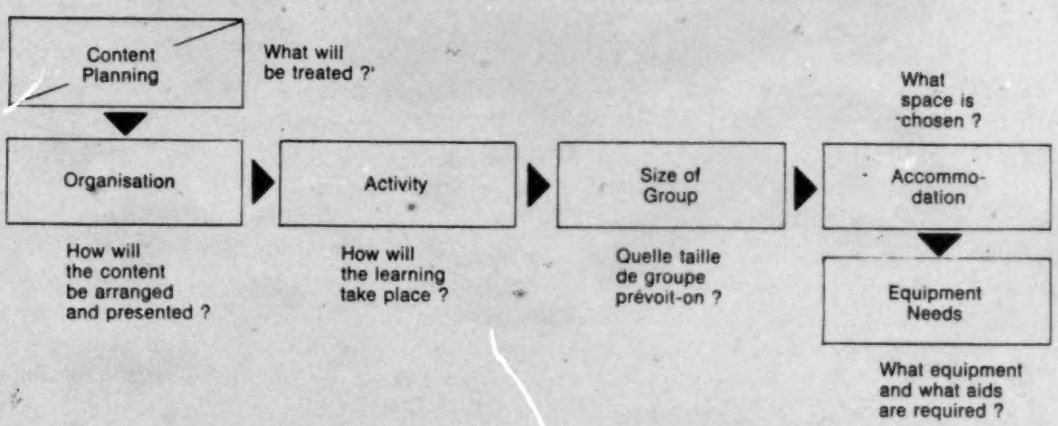
* For a short description, see Rodhe and Gran, op.cit.

** Information Leaflet N° 4, op.cit., page 6

The LINS Project

This project was first put into operation in Malmö, Sweden, with the support of the central authorities concerned. It aims at developing efficient methods of determining the equipment and aids needed for the Basic School. Each phase of the education process as indicated in the official curriculum guidelines of the Swedish Basic School *(Läroplan - Lgr* 69) can be described in the form of school situations characterised by a dominant educational objective, the size of the groups concerned and the activities to which it gives rise. It is in the light of these activities that the teachers, in dialogue with the experts, indicate the type of accommodation occupied, the equipment used and various details concerning it. By consolidating the records drawn up as a result of this dialogue, for a sample of situations, the equipment needed for the school can be derived and ways and means of rationalising it proposed. As far as is known this procedure has never been used as a basis for briefing and design of school buildings. On several occasions, however, although this was not its real purpose, it has been used to test projects at the plan stage with a view to proposing amendements, even though the method is still somewhat empirical and leads to only fragmentary results in this application. It is nevertheless thought that it points to an interesting line of methodological research.

Diagrammatic Presentation of the Steps Followed


Content Planning
What will be treated ?
What space is chosen ?
Organisation
Activity
Size of Group
Accommo-dation
How will the content be arranged and presented ?
How will the learning take place ?
Quelle taille de groupe prévoit-on ?
Equipment Needs
What equipment and what aids are required ?

List of Activities Used

Receptive activities
Listen
Observe
Read

Reciprocal activities
Discuss, converse
Question, answer

Study activities
Make notes
Write, calculate
Look up in books, practise study techniques
Work with diagrams, work sheets
Work with wall maps, blackboard, etc.
Practise phonetics and pronunciation
Work with audio-visual aids
Memorize
Carry out experiments

Creative activities
Act, dance
Sing
Play instruments
Write (e.g. essays)
Model, practise handicrafts
Draw, paint
Construct

Reporting activities
Relate
Present, demonstrate
Act
Sing, play
Undergo written examination
Undergo oral examination

Irrelevant activities unrelated to the curriculum
Wait
Discuss matters outside school work
Scrap with classmates
Play
Disturb, sabotage work of others

Source : Jean Ader, *Building Implications of the Multi-Option School*, OECD, Paris, 1975, page 37.

appreciated the fact that is basic components can serve a variety of storage and teaching needs. They can be dismantled and reassembled by teachers and pupils in ways that suit them best.*

69. The "collège d'enseignement secondaire" at Marly-le-Roi in France may serve as an example of a school where new educational technologies were decisive for the planning of the entire building. "To house up-to-date technologies and prevent a return to obsolete teaching-learning methods, the architectural setting was planned as a result of close collaboration between the architect, Pierre-André Dufetel and the teaching team constituted by Henri Dieuzeide."** Also the heart of the college, the resource centre (centre d'auto-documentation), was evolved through protracted collaboration between several working parties, with a view to offering each pupil individual instruction at any time he chooses in whatever discipline he wants. This again has entirely changed the pattern of teacher tasks.

70. Clearly, the theme of teacher participation in the equipment of the school needs to be documented separately. Admittedly the instances cited may seem somewhat extreme; the teachers who are to participate in the planning of most schools will not have at their disposal anything like the systems and technologies which are the object of the LINS, SEF and Marly-le-Roi projects. Yet the same basic facts are relevant: furniture and equipment should be treated as elements related to the educational aims of the school and their provision and purchase should be an integral part of planning the building with users/teachers actively involved.

D. NEW BUILDING - INITIATION IN USE AND CONTINUOUS PLANNING

71. Most goods of a certain degree of complexity are delivered with written instructions for use. In many cases the manufacturer is willing to demonstrate the use of his product. This procedure is most unusual in the case of buildings. Not even school buildings, the use of which is extremely complex, are delivered with instructions for use, and only recently has it come to be recognised that users of new buildings need this initiation. This may be one reason why, when work starts in a new school building, difficulties are often blamed by teachers on architects and vice versa. "If only architects would design schools as teachers want them ...", "if only teachers would use schools as they are meant to be used" are complaints often heard from each side. And teachers may blame the architects even when their own representatives have been members of the design team; the representatives' views on the design may not be shared by those teachers who are actually to work in the new school. What, then, can be done to guarantee to users of new buildings an adequate initiation into their intended use?

72. A prerequisite for the adequate preparation of the users is that the appointments of staff to the new school should be made well ahead of occupation. This should apply in the first instance to the future head of the school, but also, if possible, to the whole staff. The more innovative a school building is, the

---

* Ibid., pages 14 and 15.

** J. Poinssac, "Experiment of the College of Secondary Education at Marly-le-Roi and Its Implications for Teacher Tasks", New Patterns of Teacher Education and Tasks, Country Experience : Belgium, France, United Kingdom, OECD, Paris, 1974, page 55.

further ahead does its staff have to be appointed. Opportunities for reaching a satisfactory situation in this respect vary from country to country. In Sweden regulations governing appointments of heads and staff make flexible handling of this matter very difficult. In England, on the other hand, education authorities have greater freedom, and may use it for choosing the right kind of staff at the right time. Thus in the case of the Abraham Moss Centre in Manchester, integrating school and community facilities for primary, secondary and adult education, for a district public library, a district sports centre etc., the head was appointed a year before the start of the centre's main activities. He was then able to have a say in the selection of the staff. In Berlin, teachers were invited as early as in 1972 to inform the authorities whether they were interested in being appointed to one of the "Mittelstufenzentren", which would be ready to start work in 1974-76.* In France, a decree issued by the Minister of Education in the spring of 1974 provides for the early appointment of teachers to new experimental schools as well as the assignment of specially well-suited teachers to these schools upon the recommendation of a regional inspector. This arrangement, called 'pre-assignment' (désignation anticipée), will include a probationary period of a year in the new school, implying the right of a teacher to return to his old position should he not feel himself suited for his new one.** During the period of pre-assignment the teacher will be free from his ordinary work for a few days a month to prepare himself for his new tasks. This new decree has a parallel in one for the assignment of teachers to schools which are considered worthy of special attention because of their innovatory educational programme, even if they are not accommodated in new premises. Teachers' unions which, in France, have a say in teacher appointments, have agreed to this break in normal procedure, although with some reluctance.

73. The need for an early assignment of head and staff to a new school would vary according to the extent to which it represented a real innovation in terms of education. Ideally, teachers who have been active on or consultants to the design team should be assigned to serve in the new school. However, this may be possible only in the case of specific development projects, and even then may meet with many practical difficulties. The planning and construction of a school building usually takes several years - three to five is not an unusual time span. Thus, it might be difficult to keep the membership of the design team or of the reference committees intact throughout this period and even more difficult to keep the teachers who were involved as members of staff of the new school. The case of the innovative school in Charlottenburg-Nord in Berlin, where teachers in the planning team were to staff the school, illustrates the difficulty: only very few members of the team were able to accept an assignment to the school, and after a year only one team member is still on the staff. Certainly such a

---

* Informationsdienst Schulwesen 1/1972: "Mittelstufenzentren in Berlin. Program für Lehrervorbereitung". See also op.cit., 4/1972, and Kledzik, op.cit., page 112 et seq. The current planning for the building of "Oberstufenzentrum" also provides for a similar procedure, announced in Informationsdienst Schulwesen 1/1974.

** It may be assumed that following this first year the staff of the new school will have developed into a team which will be ready to receive and incorporate a new member who has not had the privilege of a 'pre-assignment'.

negative experience should not exclude, in any overall strategy of change, systematic efforts to staff the new schools with teachers who have participated in developing the innovative educational model to be applied in the new building. If this is planned well in advance and ad hoc decisions can be avoided, real progress could be made. Such new schools could well be among the most powerful instruments in promoting educational change.

74. When 'pre-assignment' has not been possible, or only possible to a very limited extent, "some form of in-service training or, more modestly, process of acclimatisation will be required", to quote the National Union of Teachers in Britain.* So far, this has been a neglected area in most countries. Even EFL, which has been more instrumental in this field than perhaps any other single organisation in Member countries, maintains that systematic training for service in innovative school buildings is still very seldom given. Here is a wide field for action by local, regional and national authorities, by teachers' organisations and other interested parties.

75. The type of action could, of course, vary widely from very informal to very formal and well-structured in-service training courses. The following examples illustrate a variety of situations.

- In several cases, when new schools are being built, the teachers still in the old schools put the architectural plans on display in order to familiarise themselves with their future working environment and be able to think ahead as to how a current project might be carried out in the new building compared with what is done in the old one. Large-scale models with model furniture are also used for the same purpose.
- There have been various efforts to give future teachers who are going to work in new buildings the chance of serving for a time in a building similar to their future workplace. Thus teachers due to work in a new English school were given the opportunity of working for a whole term in another recently built one before starting to plan how they would teach in their new premises. Teachers in Danish, Norwegian and Swedish open plan schools have exchanged jobs for a week or two, travel costs being borne by the local authorities.
- A Danish community with several innovative school buildings published a series of reports containing material and plans of new schools, conference reports, etc. These were used as a basis for initiating the future staff in the use of their schools.**
- In an old school which was going to move to an open plan building the sports hall was used as an open area some time ahead of the move. Thus teachers could adjust ahead to working and planning in the new environment.

---

* NUT, Open planning, op.cit., page 13.

** "Rapporter om skoler med åben-plan", 1-3, Ballerup-Måløv kommune, 1970, 1971, 1973 (stencils).

- In Denmark the Elementary School Teachers' Union arranged a conference on education in new school buildings thus making it possible for teachers with different kinds of experience to share their experience with others. Similar initiatives are presently being taken in a number of countries.*

- In France a recent initiative by the Ministry of Education aims at providing training for design teams.**

76. In Sweden the National Board of Education asked a group of educationists from Göteborg, Malmö and Trelleborg - three cities where open plan schools have been built during recent years - to produce material for in-service training courses (see Figure 6). The material*** aims at preparing:

- future staff in open plan schools;
- staff in existing open schools;
- trainee teachers;
- heads and teachers in differently designed schools.

It divided into two parts. Part I explains the educational principles behind the open plan, and gives examples of planning for the first term in the new building; Part II is meant to be used during the first year of activity in the new schools and offers examples of ways in which the various subjects can be organised in an open plan situation. These examples all relate to a fictitious 'model school' and the work is simulated in the facilities of this school, stimulating teachers to go on planning along similar lines. It is assumed that teachers will work in teams and all the staff - whether teachers, assistants, counsellors or people having other functions in the school - will take some part in planning the work programme.

77. The most ambitious programme devised so far for initiating teachers in the use of new educational models and buildings seems to be that organised by the Senator for Education in Berlin for teachers who had shown an interest in serving in the "Mittelstufenzentren". Advantage has been taken of the fact that due to a change in the school year successive groups of teachers would have part of the school year free from teaching duties. These periods were used for in-service training, which included seminars common to all the teachers, subject-oriented studies and seminars, courses related to extra-curricular activities to take place in the new buildings, workshops of group-dynamics (optional) and a process of evaluation.**** In the programme for the first few years of in-service training

---

* The NUT publication Open Planning, already referred to, may well serve as a basis for discussions at such conferences.

** "L'aménagement de l'espace scolaire", Les informations du ministère de l'Education nationale, 31.1.1974.

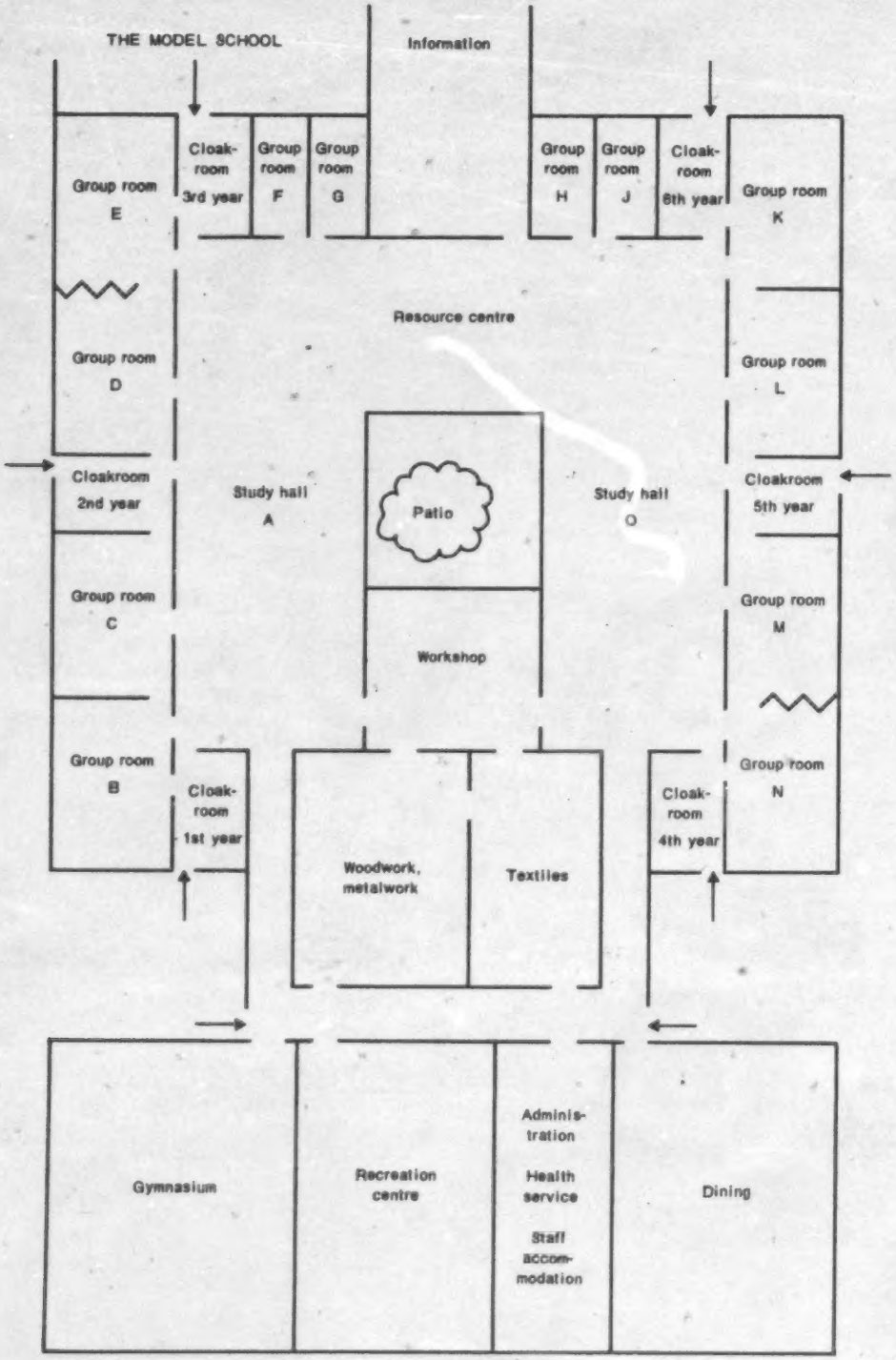
*** FB Öppna skolor. Att arbeta i en öppen skola (To work in an open plan school), Studiematerial Häfte 1 & 2, Stockholm, 1973 and 1974.

**** Kledzik, op.cit., page 112 et seq.

A special series of leaflets, called "Fragenkatalog", has also been prepared for information of and discussion by teachers.

Informationsdienst Schulwesen 1974, "Berufsfeldbezogene Oberstufenzentren Konzeption und Planungsverfahren", includes a form for teachers to register their interest in participating in the planning of the centres. See also Gesamtschul-Informationen, 1/ and 2/1974, Pädagogisches Zentrum, Berlin.

EXAMPLE DRAWN FROM SWEDISH MATERIAL PRODUCED FOR IN-SERVICE TRAINING OF TEACHERS SIMULATING WORK SITUATIONS IN AN OPEN PLAN SCHOOL



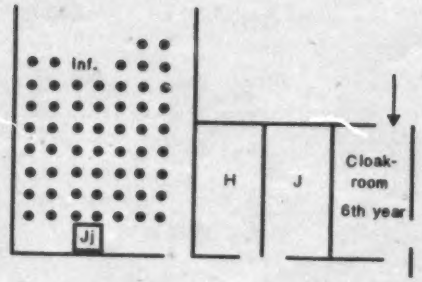
Work model 7

Work unit : the grade

Level : 1st to 3rd year or 4th to 6th year of primary education

Teachers : 2 Class teachers [Jj] or [Kk]

Subject : Orientation subjects



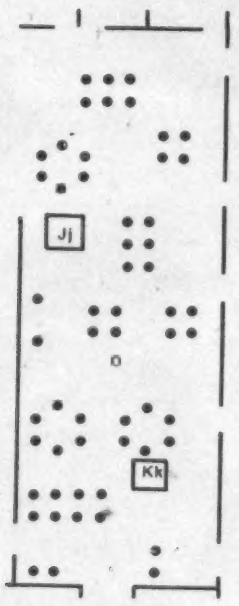
work sequence 7 : 1 — ***Introduction of basic course***

Teacher [Jj] makes an introduction which is followed by a stimulation and instruction session.

Teacher [Kk] prepares in the study hall the material needed for the continuation of the work.

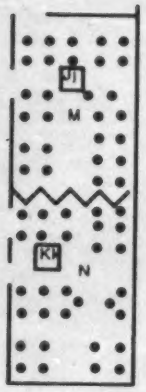
work sequence 7 : 2 — ***Study of basic course***

The pupils work individually or in groups. The teachers act as advisors.



work sequence 7 : 3 — ***Reporting of basic course,*** either by class group or by smaller groups.

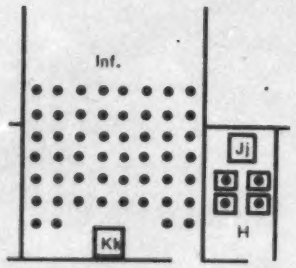
Summary presented to the teacher.



work sequence 7 : 4 — ***Introduction of upper course***

Teacher [Kk] makes an introduction followed by a stimulation and instruction session.

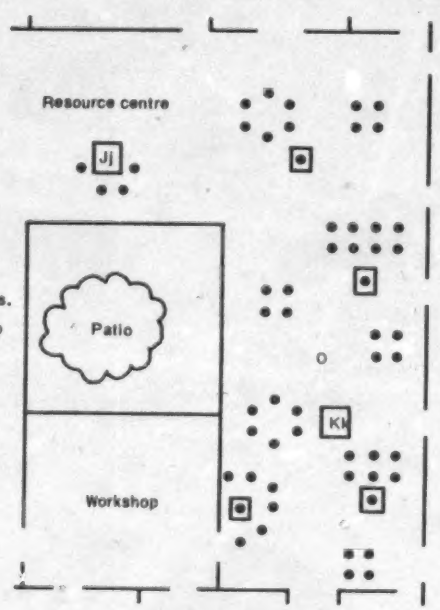
Teacher [Jj] trains a few pupils to become advisors [•] at stations.



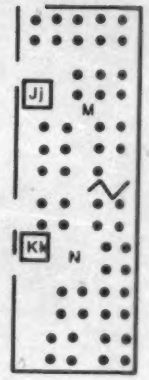
work sequence 7 : 5 — ***Group work in a system of stations***

The groups rotate. All pupils go through all stations.

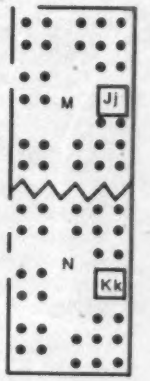
Advisors : the two teachers and the trained pupil-advisors.



work sequence 7 : 6 — ***Brief reporting*** grouping all pupils



work sequence 7 : 7 — ***Evaluation by class-group.*** Concerns both the basic course and the upper course.



no special attention was paid to physical facilities in terms of what they required and what they could offer. However, as five centres were taken into use at the beginning of the academic year 1974-75, the 1975 course will be held in the new buildings and special efforts will be made to relate the training to special qualities of the accommodation provided. A special training programme for those who were to handle these courses was provided. Those who declare themselves interested in serving in the new "Oberstufenzentren" now being planned will be offered the same type of training. Since the current programmes form the object of evaluation by both the participants and a research institute, the feedback from these evaluations will certainly influence the planning of future programmes.

78. Obviously, starting work in a new school building will mean additional efforts by all involved. If possible, provision should be made to reduce the teaching load of the staff during the first year, as is already done in some places - thus Berlin plans such a reduction in its "Mittelstufenzentren". Advisers, inspectors and other personnel with local or regional responsibilities should spend extra time assisting the staff to make the new school operational in its new premises. The design team should continue to function during the initial period in order to ensure that the intentions of planning and design are translated into actual work. This means somehow retaining the services of the architect for a longer time than usual. Teachers and other staff who come to the new building should be made to feel that they can still influence the environment - thus not all the equipment and material should be bought beforehand but some funds left for staff to dispose of as needs arise. Time and funds should also be available for developing curriculum material or adjusting prefabricated teaching material according to the needs of and possibilities offered by the facilities and by the educational programme for which the building was planned. Staff should also be able to relocate mobile components and equipment in the light of experience in use so as to recognise the opportunities such relocation provides.

79. The case of a school building project in Germany illustrates how this may be done. When the integrated "Gesamtschule Rodenkirchen" in the district of Köln in Nordrhein-Westfalen was being planned, a most friendly relationship developed between architects and educationists. This was extended to the teachers, who entered the planning process only as the building was completed, and to pupils and auxiliary personnel. The architect also spent several days a week in the building after school work had started. Thus he was able to assist the users as they began to realise the potential of the building for their work. He, too, benefited from the opportunity for continuous observation of the educational process.* His experience has been drawn upon in courses for young teachers on the use of buildings for educational purposes. In another German case an architect has become the director of a technical college housed in an innovative building (in Löhne, Nordrhein-Westfalen), which should make him uniquely able to guide and teach both architects and educationists about the planning and use of buildings.

80. If, as in the case of many new integrated or co-ordinated buildings, authorities other than educational ones share the responsibility for managing the new

---

* Kurzinformation 3, Schulbauinstitut der Länder, Berlin, January 1974, page 34 et seq.

the model of co-operative management needs to be well prepared and the initial operation carefully observed and encouraged. No ready-made patterns are normally available for this kind of joint management and extra efforts have to go into developing them. Very prosaic factors, such as responsibility for custodial services and cleaning, can mar smooth co-operation if not planned and agreed upon well ahead of time.

81. Teachers and other staff need training before they start work in new school buildings. Even pupils may need training. But staff have often been surprised to see how easily even very young pupils (and perhaps especially the very young ones) have adjusted to the new environment and found out how it might be used. In an innovative elementary school building, integrated in a community centre in Grenoble (France), the children showed the teachers the way to work in the open area (l'aire ouverte); it took teachers much longer to feel at home in the new environment than it took the children. Teachers would do well to give children a chance of showing the way in this kind of situation; in doing so they may eventually get into the habit of planning the use of space with their pupils. In the Netherlands very positive experiences have been made in respect of involving pupils at an early stage. Thus, when a school in Utrecht was being planned pupils made various designs and models and expressed their ideas on flexibility. Even if informing pupils does not always give results as spectacular as those in the examples mentioned, it should be a rule that before a new school is put into use ample information is given not only to teachers and other staff but also to pupils and parents. Information leaflets, free access to the new school buildings and discussion evenings proved useful in introducing parents to the German "Mittelstufenzentren".

82. In quite a few cases it has been observed that in-service training and initiation programmes held before the start of work in a school building of a new type have had less effect than was expected. Somehow the new experience was too different from the old really to be anticipated, and a good deal of this training was lost as a result. Some authorities have found it useful to repeat the introductory course or, rather, to divide it up, so that teachers and other staff having had some experience of working in the new school could be offered an opportunity of evaluating this experience and learning more of the possibilities the building offers. This has been envisaged in the Swedish material referred to earlier. The teachers in the Berlin open plan school Charlottenburg-Nord are said to have found the second introductory course, offered a year after the first one, of more value than the first.

Continuous planning

83. It has been said all through this paper that one of the most important new aspects of school building is that it is to be considered as one of the instruments used to realise the educational objectives of the school. This implies that the planning of the school building is never complete. To quote an EFL publication: "The hardest new lesson is to recognise that a facility used by a live organisation is never finished. It is never finished. It is, on the contrary, always in a state of adjustment, growth and restatement ... The planning process, then, has to be dominated by the premise that it is a continuing function. Issues and their resolution must be very close to one another - in

an 'on-line' relationship. 'On-line' - a term which has emerged from the computer world - implies a plug-in to the continuing spectrum of live events in an organisation. Its point is to avoid the pitfalls of decision-making based on stale information parked on side tracks. 'On-line' planning is management that marshalls current information to make decisions about change and keeps the physical facility in a posture that can respond. This not only permits desirable variation in day-to-day programming, it permits the accommodation of exceptional events which assuredly happen." The conclusions drawn are the following: "The hit-and-run services of architects, consultants, and other experts who deliver a facility and then disappear from the scene are no longer adequate. Their roles will have to be re-conceived in terms of sustained involvement in the organic evolution of the facility. This may be through formal contractual arrangements for sustained service or through informal understanding with the professionals that they will be available. Whichever way, it will take teams made up of design specialists who learn to think like teachers, and teachers and administrators who learn to think like designers, to make 'on-line' management planning an applied tool in education."*

84. The need for the architect - or preferably the whole design team - to remain involved is being increasingly recognised but still rarely met. Ways should be found of securing the continuous service of the design team both in connection with the planning of the annual work and whenever plans are made for the further re-modelling of the building. This should be a continuous process, the prerequisites of which are, in principle, the same as for new building. Certainly, the cost may be considered prohibitive. On the other hand, the continuing involvement of teachers in such a process would secure much better and more imaginative use of existing buildings so that savings would be possible elsewhere. For the present neither builders/decision-makers nor teachers are, on the whole, prepared for this kind of continuous planning. This sometimes makes for a vicious circle where the failure to provide for architects to assist teachers results in the building being used less functionally than was intended. At the same time, instructions for use may be considered by the individual teacher an undesirable intrusion upon his traditional loneliness, a loneliness which he is used to calling freedom.

85. The cost for involving architects not only during the briefing, design and construction stages but also in the continuous planning related to the use of the building would depend on the relationship between the building authority and the architect. Where the authority has its own architects - like the county architects in England - it might be natural for these to follow through and try to evaluate what they have done in terms, also, of "tuning up the building as new tunes were invented for it to play", as one architect put it. Authorities which do not employ their own architects but still have a large building programme would probably be wise to create consortia of private architects who can be given a continuing commission to build not just one school but a series. This would enable them to enter into a stable relationship with the users of the schools and reach

---

* EFL High School: The Process and the Place, op.cit., pages 110 and 111.

a growing understanding of their problems, and also to feed the experience gained in the first school(s) into the next one(s) in the series. This kind of arrangement would probably change the cost aspect of involving architects, together with educationists, in the continuous planning of the schools.

86. The budget should be planned to allow for adaptations to annually changing needs and for purchases of additional equipment as new needs arise. The decisive point is that the use of space and equipment is made an integral part of all educational planning. The traditional way of assigning certain facilities to one teacher and his class at the same hour over the whole school year may have to be abandoned. Instead, a set of facilities should be assigned to a group of teachers for the whole of the school year or for part of it. It would be left to the group to settle among themselves how these facilities should be used for the activities they are planning. This allocation of facilities should not result from any fixed rules. It can and should vary, within certain limits, as educational practice develops; and must therefore be the subject of a series of decisions which form an integral part of the life of the school.

87. New perspectives are thus opened up as to school organisation and management. This has been apparent in new types of school buildings in Norway and Denmark (in Sweden, too, though less markedly). Groups and teams of teachers work and plan in an increasingly independent way, heads become co-ordinators, links to the outside world, and less of 'rulers'. Self-governing groups are also coming into being in English schools. In Norway the question is being asked: does the school need a head? and structured R and D work is being designed in order to try out non-hierarchical models for the management of schools.* There is, however little or no correspondence between these new ideas and the rules that - so far - lay down the responsibilities of heads of schools. Because of this it has not yet been possible to put into practice along these new lines the proposals emanating from the R and D work. In Sweden the report of the SIA Committee (the committee on the internal working conditions in the school) recommends far-reaching change in school management since, in the case of each school a governing board will take over a share of the responsibility, partly delegated from the national, regional and local authority levels, partly from the head.** Although so far the conclusions and proposals of the SIA Committee do not really concern school buildings***, the examples drawn from Norway and Denmark seem to indicate that physical change in buildings, called for by educational change, in its turn calls forth organisational change and furthers participation and democracy.

---

* p.i.p. Forsök i Osloskolen, 1-1974, plof: "Er styrer nödvendig? Skolestrukturer. Grunnskolene i Oslo vurderer egen struktur", Rapport fra skolsjefen i Oslo, Nr. 25, Oslo, 1973.

A. Saltness, "Administrasjon og ledelse i åpne skoler", Informasjon om forsöksarbeid, Nr. 41, Oslo, 1973.

** Skolans arbetsmiljö, Betänkande avgivet av Utredningen om skolans inre arbete (Sou 1974:53), Allmänna förlaget, Stockholm, 1974.

*** The Committee has published a discussion paper on what was called a 'home-room school', a variation of the open plan school, "Högstadieskolans Fysiska Miljö", 1973; as well as a survey of Grundskolans lokalresurser, Utbildningsdepartementet 1974:3, dealing with facility resources for the "grundskola".

88. Finally, a word should be said about the importance of feedback, in relation to continuous planning i.e. that experience gained in new school buildings is fed into the planning of further buildings. Some building authorities will carry out the necessary evaluations through informal observation; others will prefer to combine it with a more scientific approach, using research teams to observe and interpret change.

E. TEACHER PARTICIPATION IN RESEARCH AND DEVELOPMENT WORK

89. At the OECD Symposium on School Building and Educational Change an attempt was made at defining research and development work in the field of school building. "Research in school building is largely applied research. It is located at the inter-section of research conceived as an autonomous activity, with the practice of innovation in school building. Development work links research with everyday building practice. It takes scientific theories and techniques evolved under controlled laboratory conditions and applies them to school building problems, where they are subject to the influences of economic, industrial and commercial factors which affect their use. For example, research in the field of psycho-physics helps to define the most beneficial physical conditions for work in school, and development then seeks the best solutions within the cost available. Development then becomes the integration of all available knowledge - educational, social, scientific and technical - applied in school building projects. During the course of development new problems are encountered on which further systematic research is essential. These may be referred to specialised research institutes (e.g. national building research agencies) or to appropriate university departments. Systematic evaluation of innovatory projects, and dissemination of the results, is also an essential part of development processes."* The section on research and development activities in the report on the above Symposium, gives what is probably at present the best overall view of what such activities could and should be about. However, little is said about the specific participation of teachers, a fully understandable omission. A brief indication will be given here.

90. So far teacher participation has often been merely passive. Teacher practice may have been observed directly by research and/or development workers. Teacher opinion has been asked for in, sometimes, endless questionnaires. In other cases teachers themselves have been active in asking for the results of research, for example in relation to a certain type of building, but even here they have generally not asked to participate in actual research and development work. In cases where teachers demand scientific evaluation of buildings their claims could be taken as a point of departure for involving them more actively in such work. Buildings can never be evaluated as such; it is only in use that they can be assessed, and teachers are the ones who have to make them function according to the educational model(s) for which they were built. This would be true whatever the organisation of school building research. In the inter-disciplinary

---

* Pearson, op.cit., paragraph 62.

co-operation necessary for research and development work in school building, which has yet to find its expression, the participation of teachers and educationists is indispensable. These are some of the tasks which they would have to perform:

- define problems connected with the realisation of educational objectives;
- assist in developing a methodology for translating objectives via educational models into facility requirements on the basis of a "multi-dimensional analysis of activities";
- participate in "action research", for example, as regards the application of alternative educational models to a school building;
- participate in the process of feedback through constructive criticism of design solutions.

91. So far there seem to be comparatively few research projects dealing with the relationship of the building to educational objectives and practice. Very few scientifically-based evaluations exist of traditional buildings; most efforts have gone into evaluating innovations, a difficult undertaking since there is a serious dearth of data for comparison. Examples of evaluation projects of new buildings are to be found concerning SCSD and SEF*, and also in respect of open plan schools in Sweden and Norway.** In all such projects much remains to be done in terms of developing methodologies, a task for the inter-disciplinary research team. They will not be able to fulfil it, however, without the active and continuous co-operation of the educationist in the field. Little research is being carried out as yet in the field of school building, but even so, problems of disseminating such findings as do exist are evident. When research is planned, funds for the dissemination of results should always be set aside, and appropriate channels found. International organisations could play an important role here - and have, in fact, already done so.

F. TRAINING OF THE USERS

92. The concept of the school building as an instrument for the realisation of educational objectives is still new. It is, therefore, not surprising that in all Member countries people are to be found who say that teachers are not yet sufficiently trained, or not trained at all, to use this instrument. This is why, aspects of teacher training are dealt with in this paper.

---

* See in particular Alexander B. Leman, A Study of Systems Building Evaluation of SEF, (to be published, in English and French, by the Department of Industry, Trade and Commerce, Ottawa).

Within EFL, John Boice is responsible for evaluation studies of systems-built schools.

** Gran, "The Open Plan Schools in the Malmö Region", op.cit.

Rodhe and Gran : New Patterns of Teacher Education and Tasks, Country Experience: Sweden, op.cit.

S. Svensson and others: Öppnare skolor i Göteborg, Rapport N° 1, Göteborg, 1973.

Gran, "Öppna skolor i Sverige, en lägesrapport", Pedagogisk-psykologiska problem N° 234, Lärarhögskolan, Malmö, 1974.

93. For many years to come the majority of teachers will have to teach in school buildings put up before 1960; many in much older buildings.* They will have to learn how to adapt these, as far as possible, to new demands in educational and environmental terms. They will also have to get used to and actively participate in a process of transforming school buildings into buildings which can be used by the community as well for a variety of purposes. This will apply even more in the case of new buildings, since in some countries school buildings as such are gradually disappearing and building for education is generally considered as part of the building programme for the community at large, with multi-purpose use of most facilities. At the same time teachers will also have to get accustomed to the use for educational purposes of buildings not originally designed for such purposes. 'Found space' is a concept which will probably have to become familiar to teachers not only in the United States, where it has spread during the last few years, and this not solely for economic reasons. Teaching and learning will have to take place not only in buildings planned or adapted for educational purposes, but also using the opportunities provided by society as a whole. This in itself will reduce the demand for and quantitative needs of educational building - a factor which will have to be taken into account when new educational buildings are planned. Thus the fact that physical facilities increasingly constitute instruments for realising new educational objectives not only influences the character and quality of the school building as such but also makes it necessary to recognise that these could consist of facilities other than building specifically designed for education. It could be 'a found space' in its widest sense, and this concept has to become an integral part of any planning by teachers bearing in mind that 'found space' is equally an instrument for purposes other than educational.

94. The relation to space and physical facilities is not yet, but should become, an aspect of initial training of teachers. In most countries the traditional school building with its traditional equipment still seems to be taken largely for granted as the educational environment with which the trainee teacher is to become familiar. The relation to facilities must henceforth become one of the variables he is taught to handle when learning to plan his teaching. For this reason it seems essential that his teachers are not all educationists but that he also meets architects and other people who have specialised in the design and use of buildings. In Germany there is at least one example of school building being treated as an integral part of teacher training, but this should become general practice**. However, the problem is not solved by adding one more theme to all those which already form part of teacher training. The most important thing to learn, from the beginning of teacher training, is how to use the building as an educational instrument but also how to leave it when other facilities would

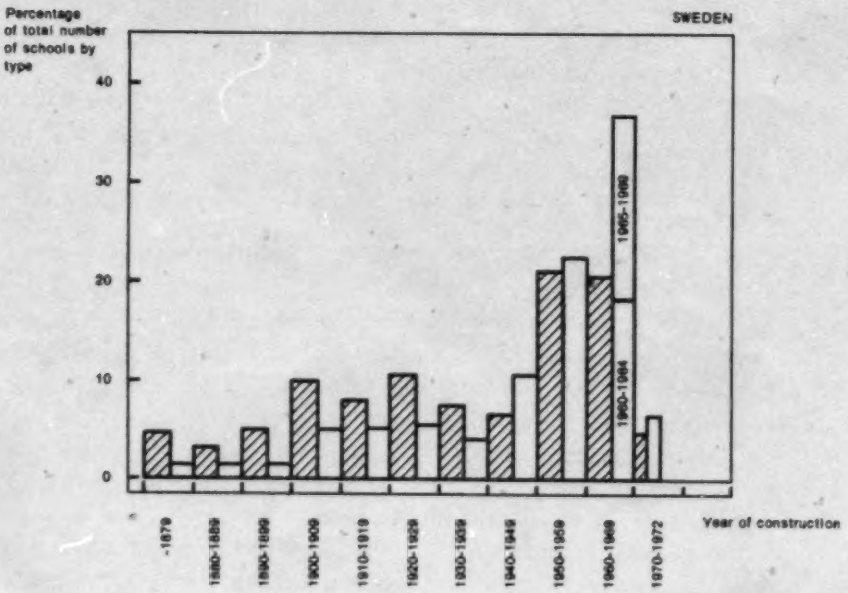
---

* The Swedish SIA report, Grundskolans lokalresurser, contains a detailed assessment of the age of Swedish school building. At the same time the report shows how difficult it is to make such an assessment.

The EFL publication, New Life in Old Schools, Chicago 1968, gives an estimate of the age of school buildings still in use as such in the United States, page 1 et seq.

** In Dortmund. See: K.H. Koch, Schulbaubuch, Bertelsmann, Düsseldorf, 1974; and K.H. Koch & H.G. Rolff, "Konzepte der Sozialen Organisation - und Raumstruktur von Schulen der Sekundarstufe I - Eine Projektstudie", (stencil), Werkheft, March 1974.

SOME DATA ON THE AGE OF SCHOOL BUILDINGS IN SWEDEN (AT THE LEVEL OF THE "GRUNDSKOLA") AND IN THE WEST HARTFORD SCHOOL DISTRICT IN THE UNITED STATES



Type 1 : 9 year-school (with upper level) - 792 schools.

Type 2 : 6 year-school (without upper level) - 3951 schools.

Source : Report by the SIA Committee, *Grundskolans lokalresurser*, Utbildningsdepartementet 1974 : 3, Stockholm.

WEST HARTFORD

SCHOOL	DATE OF CONSTRUCTION	DATES OF ADDITION	NORMAL CAPACITY
ELEMENTARY SCHOOLS			
Mary Louise Aiken	1964	- - - -	356
Beach Park	1921	1931, 1950	150
Braeburn	1956	- - - -	348
Bridlepath	1959	- - - -	328
Lloyd H. Bugbee	1950	- - - -	370
Charter Oak	1929	1953, 1959	334
Louise Duffy	1952	- - - -	608
Elmwood	1928	1951, 1959	374
King Philip	1955	- - - -	458
Morley	1927	1952	388
Eric G. Norfeldt	1958	- - - -	520
Florence E. Smith	1915	1925, 1953	304
Webster Hill	1949	1953	474
Whiting Lane	1954	- - - -	410
Whitman	1910	1956	304
Henry A. Wolcott	1957	- - - -	476
JUNIOR HIGH SCHOOLS			
King Philip	1955	- - - -	800
Alfred Plant	1922	1929, 1954	678
William Thompson Sedgwick	1931	1957	755
James Talcott	1922	1940, 1950	649
SENIOR HIGH SCHOOLS			
Frederick U. Conard	1957	- - - -	1733
New Hall	1970	- - - -	1600

Source : Mcleod, Ferrara and Ensign, A.I.A., *School Renewal*, supported by Educational Facilities Laboratories, Inc., New York.

better serve a particular educational objective. The practical training should, whenever possible, take place in different types of school buildings, so that the trainee teachers learn how to use the potentials of varying facilities. The class and the classroom should not be regarded as constant factors in the planning of trainee lessons; whenever feasible such planning should include the use of flexible grouping and deal with related needs for space. The fact that teacher colleges are often built on traditional lines and that many of those in charge of teacher training have themselves little experience of using physical facilities as instruments for the realisation of educational objectives may be a barrier. Consequently, the training of those in charge also becomes an important issue.

95. It is growing increasingly clear that initial training cannot adequately meet all the needs of teacher training. Continuous in-service training is therefore being introduced in most countries. Most of what has just been said about initial training in relation to physical facilities could be repeated here. In-service training as regards the use of facilities should, as far as possible, be closely related to the actual situation in which a teacher works or may come to work. Instances of how programmes have been developed in different countries for training teachers who are to serve in new buildings were quoted in Section D. This kind of training should not be limited to new building - it is just as important for teachers who will continue to work in old buildings to be given the opportunity to re-think and to learn how to go about adapting old schools to new purposes. Similarly, the integration of the building aspect into other themes of in-service training is essential.

96. Not all in-service training need be in the form of courses or seminars. Much could and should be literally in-service training of a more informal character. The head of the school should take the lead, possibly assisted by an architect specialised in school building (or other building expert) and by the local or regional educational adviser. In some countries the inspectors take such initiatives on the occasion of their visits to schools; in other countries this is still a possibility which has not been sufficiently exploited. As team teaching becomes more and more frequent in schools the spatial planning of teaching and learning situations also becomes a learning situation for teachers who may earlier have been confined to the traditional classroom and have taken this for granted as the only possible environment for their teaching.

97. Learning about physical facilities and the active use of them for educational purposes can never be confined just to class or conference rooms of the traditional type. Teachers in training, whether of an initial or an in-service nature should have the opportunity of seeing, and working in, school buildings of very different types, and thus of learning how planning and teaching could involve different spatial conditions. Teachers' centres, where, they exist, and especially where they have been integrated with new buildings, could be used for these purposes. In Britain several of these centres conduct courses on the planning and use of school buildings, and often make a valuable contribution as regards locating and training possible members of design teams*. Teachers working in new school

* "Teachers' Centres" in Teachers as Innovators, OECD, Paris, 1976.

buildings should take special responsibility for conducting in-service courses, and possibly also participate in initial teacher training. Provision should be made for such tasks in determining their work load.

98. Finally, something should be said about possible methods for training in the use of space and facilities. The most important method has already been mentioned, namely to provide teachers with the opportunity to practise teaching in school buildings of different types, including, if possible, new and innovative buildings. Study visits to other schools are useful, but actual teaching practice has far greater value. As team teaching becomes more and more common it should not involve any great problems to accept an additional member of the team for a period of a couple of weeks. As a preparation for and a follow-up of such live experience, or, if necessary, to replace it, simulations of different kinds could be used. Models are useful, especially if they contain movable partitions and furniture.*

Figure 8

Model being used for training teachers in the utilisation of space.

Architectural plans with movable needles signifying staff and students were used in the development of the Swedish LINS project and were found helpful, though the method proved time-consuming. Games and role-play help teachers to face and solve problems in new surroundings. In the second-year course in Charlottenburg-Nord, referred to in paragraph 82, teachers were asked in advance to write down their most acute problems and transmit their notes anonymously, and some commonly recurring problems were dealt with in role-play. This was found an extremely useful method. Schools of architecture often have full-scale laboratories; these could be used and shared by schools of education. It appears, however, that methods for the use of such laboratories in situations as complex as those arising in the field of education still have to be elaborated. The further development of methods for training in the use of school building facilities would seem to be an urgent task for research and development.

* Such models could be fabricated not only by architects but also by pupils, and be put to use in training situations where both staff and pupils are involved.

99. Only the training of teachers has been treated in this section. However, it is becoming increasingly recognised at least in some countries that, whenever possible, teachers should be trained together with other members of school staff, and this of course also applies to training in the use of buildings. Architects, too, need additional training about school buildings as instruments for realising educational objectives, similar to that which has been recommended for teachers.

G. SUMMARY OF CONCLUSIONS

100. This paper attempts to describe the contribution of educationists in the provision of new school buildings and the adaptation of existing stock. It will also look at the measures needed to help teachers make full use of the educational tool represented by the school building, its furniture and its equipment. It combines the concerns of two OECD programmes, that on Educational Building and that relating to Teacher Policies. The school building is seen as one of the instruments at the teacher's disposal for realising educational objectives. For this, it may be necessary to make changes in the building, be it an existing building or a new one.

Section A (paragraphs 8 to 30)

101. "In the years ahead, we may see more of rebuilding and less of new building within the educational sector of society", writes a Director of Education to the teachers of his county at the beginning of the school year 1974-75. This is why adaptation of the existing stock of buildings occupies a relatively large place in the present paper. In the majority of cases the traditional building, the 'egg-crate school', which may have been functional in a different pedagogical situation, impedes the realisation of new educational objectives, such as democratisation and individualisation. It may also form a barrier to the effective use of new media.

102. Though some teachers cling to the old type of building others find it inhibits educational change and resign themselves to the status quo. Others again, see the possibilities for change only in additions to the existing building. Some illustrations from different countries and at different school levels are given, to show how, in many cases, teachers have found constructive and imaginative solutions to the problems of adapting existing buildings in order to realise new objectives.

103. Measures of the following kind could lead to the drawing-up of a strategy which may stimulate and encourage such initiatives on the part of teachers:

- closer interaction between teachers and local, regional and/or national agencies and officers should be developed;
- the individual school should be encouraged to try, in the first place, to work out its own solutions;
- the head of the school who carries the main responsibility, should be on the look-out for persons on his staff with specific gifts for using space in a constructive manner;

- educational advisers, regional inspectors, directors of education etc., should be aware of initiatives in local schools as regards new use of facilities and offer assistance, wherever needed, when the resources of the individual school are exhausted;

- advice of a school building architect should be made available to staff of the school for formulating ideas and proposals;

- the efforts of teachers should be combined with those of other personnel, pupils and, possibly, parents.

Section B (paragraphs 31 to 63)

104. In the tripartite involvement of decision-makers, technical specialists and users in the briefing and design of new buildings, educationists may be found among the specialists, but more often among the users. The specialist/educationist, who is often an educationist/administrator, is needed as co-ordinator, a liaison officer between decision-makers and users, and the person responsible to the decision-makers for organising the teachers' contributions. Not only a dialogue between specialists and teachers/users should be attempted but a 'plurilogue' between all parties concerned, going on throughout the briefing and design stages - two stages which should merge. This means that it is not enough to involve the teachers only in the beginning of the briefing stage in order to define 'user requirements', or at the end of the design stage for 'consultation' on the design.

105. Instead, teamwork should take place all through the planning of the building, teamwork which might be defined as a situation where:

- everyone has his own special competence and responsibility, but decisions are taken together and after open discussion;

- members of the team are prepared, able and willing to discuss all problems with one another as they arise;

- a common language is gradually developed, each party taking care to make sure that he understands and is understood by the others.

This kind of teamwork should apply to a process whereby educational objectives are translated via educational models into activities with a view to determining the facilities needed. Methods for this kind of translation process are still to be developed. As the building design emerges out of the teamwork, it is very important to check that it fits not just one educational model but that different models can be applied. This may call for the involvement of more educationists.

106. The question of who are the teachers to be included in the design team is of prime importance. Possibly, those who - as under A above - have themselves worked to find constructive solutions to the application of new educational models in old buildings could be especially useful. However, the teachers' unions may also make claims for their elected representatives to be consulted and even made members of the design teams. In addition, the teachers who are to teach in the new buildings - in the minority of cases where they are known in advance - may want to have a say. The selection of teachers to be included on design teams

and the forms for further consultation of teachers must be decided according to the specific conditions and relationships between building authorities, teachers and their unions in various countries. The authorities always have to take the needs of society at large, and those of other personnel, pupils etc., into account besides those of teachers. Teachers who are involved in design teams should be given the chance to study material, models, other schools, and, as far as possible, to share this experience with the architect and other technical specialists.

Section C (paragraphs 64 to 70)

107. On the whole what has been said about the briefing and design stages also applies to the furnishing and equipment of a new or remodelled school building. Furniture and equipment should be regarded as a part of the total design of the school and not left to a purchasing service at the construction stage, as is still too often the case. Some interesting examples of integrated planning and development in this field illustrate this statement.

Section D (paragraphs 71 to 88)

108. School buildings should be delivered with instructions for use like other goods of a certain complexity. Often this means that a phase of initiation should be allowed for teachers and other personnel.

- Early appointment of the head and at least some teachers is highly desirable wherever feasible, in order to secure adequate pedagogical planning of the use of the building. Thus a new building, designed for the realisation of new educational objectives, and planned through the kind of process outlined above under B, staffed ahead and with plans for the teaching practice worked out beforehand, could become an important element in a global stragegy for change.

- Several examples are quoted to illustrate that, under different conditions, different modes of initiation, ranging from informal to more formal, can be effective.

- It is important that the services of the architect and of educational advisers be retained during the preparatory and introductory phases.

- The initiation phase should be followed by continuous planning and adaptation of the building, which should be regarded as never finished. If possible, the architect should be integrated in this continuous planning and should help to ensure that the potential of the building for flexibility and adaptability is sufficiently exploited. New opportunities for in-service training in the use of the building should be offered, as problems and possibilities may occur only gradually. Team teaching offers good possibilities for the informal introduction of new teachers in the use of the building.

- The planning of the use of facilities may well be assigned to teams and groups of teachers and not fixed by the head for the whole school year.

- Such practice may lead to the development of new concepts of school management, the development of self-governing groups and a new role for the head.

Section E (paragraphs 89 to 91)

109. In research and development work on school building, which in its educational aspects is still very much in a beginning stage, teachers may have to perform such functions as:

- defining problems connected with the realisation of educational objectives;
- working on a methodology for translating objectives via educational models into facility requirements;
- participating in 'action research', for example on the application of alternative models to one and the same project;
- participating in the process of feedback through constructive criticism of design solutions.

The importance of continuous study and review of past experience in order to achieve an effective feedback process is especially stressed.

Section F (paragraphs 92 to 99)

110. The relation to physical facilities should become an aspect of teacher training, in initial training as well as in-service training.

- The building should become one of the variables which the trainee teacher learns to use when he plans his teaching, thus making sure that he learns to look upon the building as an instrument for achieving educational objectives.
- Practical training should take place in different types of school buildings.
- Whenever possible teacher training institutions should be equipped with facilities to demonstrate the constructive and flexible use of space.
- In-service training should contain similar elements. Teachers' centres may play an important role in such activities.
- Methods for training in the use of school building should be systematically developed. The use of simulation models, games, full-scale models, role-play etc., should be encouraged, although it is probable that the opportunity for visiting buildings of different types and observing the use made of them has the greatest educational value.
- Whenever possible, educationists and architects should be given experience in the educational use of school buildings together. The training of architects should be revised in ways similar to those indicated for the training of teachers.

PEB INFORMATION LEAFLETS

Issued by the OECD Programme on Educational Building (PEB), the leaflets aim at disseminating information on themes related to the activities of the Programme and on interesting examples of innovatory school buildings. They are particularly directed at administrators, local politicians, architects and educationists working in this field and it is hoped they will stimulate them in their search for new solutions to new problems. Leaflets available to date (English and French versions) are:

1. School Building Today and Tomorrow
2. Maiden Erlegh: An English Secondary School Development Project
3. C.R.O.C.S.: A Swiss Industrialised School Building System
4. ff5: A Canadian "Casework", or Furniture and Equipment System for Schools
5. Industrialised Building Systems, Educational Objectives and the Problem of Change
6. Institutional Arrangements for School Building
7. Teachers and School Building

To ensure that future leaflets are related as closely as possible to the interests and pre-occupations of the readers, the Secretariat would welcome comments and suggestions for further topics. These, and also requests for additional copies of available leaflets, should be addressed directly to the PEB Secretariat, or alternatively, if from a participating country, to the national representative or correspondent to the Programme.

NATIONAL REPRESENTATIVES AND/OR CORRESPONDENTS TO PEB

AUSTRALIA : Mr. R.A. FOSKETT
Department of Education
P.O. Box 826
WODEN, A.C.T. 2606

AUSTRIA : Mr. M. HINUM
Bundesministerium für
Unterricht und Kunst
Minoritenplatz 1
1014 VIENNA

BELGIUM : Mr. A. van BOGAERT
Fonds des Bâtiments scolaires de
l'Etat, des Provinces et des Communes
Ministère de l'Education nationale
28 rue J. Lalaing
BRUSSELS B - 1040

DENMARK : Mr. H. KJEMS (Chairman)
Ministry of Education
21 Frederiskholms Kanal
COPENHAGEN K

FINLAND : Mr. O. LAPPO
Helsinki University of Technology
OTANIEMI

FRANCE : Mr. G. LE MEUR (Vice-Chairman)
Direction des Equipements
Ministère de l'Education nationale
142 rue du Bac
75357 PARIS

GREECE : Mrs. I. PANAYOTOPOULOS
Division for School
Construction Programmes
Ministry of Education
15 Mitropoleos Street
ATHENS

IRELAND : Mr. S. O'MAHONEY
Building Unit
Department of Education
Marlborough Street
DUBLIN 1

ITALY : Mr. C. CICCONCELLI (Vice-Chairman)
Centro di Studi per l'Edilizia
Scolastica
Ministero della Pubblica Istruzione
Piazza Marconi 25 - EUR
00144 ROME

NETHERLANDS : Mr. H.M.C. FAKKERT
School Building Department
Ministry of Education & Sciences
Riouwstraat 178
THE HAGUE

NEW ZEALAND : Permanent Delegation to OECD
7 ter rue Léonard de Vinci
75116 PARIS

NORWAY : Mr. O. VORMELAND
Director of Education for
the County of Oslo and Akershus,
Erich Mogensens Vei 38,
OSLO 5.

PORTUGAL : Mr. A. M. GONÇALVES
Direcção-Geral das
Construções Escolares
Praça da Alvalade N° 11-2°
LISBON 5

SPAIN : Mr. J. I. URIOL
Junta de Construcciones
Instalaciones y Equipo Escolar
Ministerio de Educacion y
Ciencia
Alfonso XII, 3 y 5
MADRID

SWEDEN : Mr. Å. FÄLTHEIM
Board of Education
Karlavägen 108
S-106 42 STOCKHOLM

SWITZERLAND : Mr. B. von SEGESSER
Hirschengraben 43
6000 LUCERNE

TURKEY : Mr. A. OKAN
Yapı Araştırma Enstitüsü
Atatürk Bulvarı 243
Kavaklıdere
ANKARA

UNITED KINGDOM : Mr. D. M. FORRESTER
Architects and Building Branch
Department of Education and
Science
Elizabeth House
39 York Road
LONDON SE1 7PH

PEB SECRETARIAT

Miss L. GIBSON : Principal Administrator
Mr. J. ADER : Professional Staff Member
Mrs. F. FRANCESCHI : Assistant responsible for documentation
Mrs. J. BARNOUX : Secretary

Mr. G. ODDIE : Senior Adviser

2, rue André Pascal
75775 PARIS CEDEX 16
Tel. : 524 9260